

THE RELATIONSHIPS AMONG PERSONALITY TYPE, COPING RESOURCES,  
AND BURNOUT IN FEMALE ELEMENTARY TEACHERS

By

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Abstract of Dissertation Presented to the Graduate School  
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Researchers have found that burnout among teachers is an international problem. Burnout causes both personal problems for the individual and decreased effectiveness at work. Use of appropriate coping strategies has been found to ameliorate or postpone burnout.

One of the personality variables that has been found to correlate with the amount and pattern of burnout is personality type as measured by the Myers-Briggs Type Indicator (MBTI). Personality type has also been found to correlate with the type of coping strategies used. Although personality type has been found to be related to coping and to burnout, and coping strategies have been found to be related to burnout, no one had previously looked at the relationships among the three variables. The purpose of this

study was to examine whether coping mediates the relationship between type and burnout.

The MBTI, the Coping Resources Inventory (CRI), the problem solving subscale from the Stress Assessment Profile (SAP), and the Maslach Burnout Inventory (MBI) were administered to 189 elementary teachers from 14 public schools in north central Florida. Level of burnout among the teachers was average. Reported use of coping resources was above average. The teachers reported a preference for introversion, sensing, and feeling significantly more often than did a norm group of teachers.

Path analysis was used to examine the hypothesis that coping mediates the relationship between type and burnout. The results of the regression analyses indicated significant positive relationships between Personal Accomplishment and both extraversion and sensing. Several significant relationships were found between type and coping resources. However, the results did not support the mediation models.

Exploratory cluster analysis was also conducted on the results of the coping resources scales and the burnout scales. Five meaningful coping clusters and four meaningful burnout clusters were identified. Type correlated with four of the five coping clusters. The coping clusters also were significantly related to the burnout clusters.

Results from this study lend support to the trait-oriented view of coping. The cluster analysis results

indicate that the pattern of coping may be more important than particular coping resources but also suggest some specific interventions.

## CHAPTER 1 INTRODUCTION

### Statement of the Problem

Teaching is presently considered a stressful occupation (Blase, 1986; Dewe, 1986; Hawkes & Dedrick, 1981; Hock, 1988; O'Conner & Clarke, 1990; Wyly & Frusher, 1990). In a study of K-12 teachers, Hawkes and Dedrick (1981) found that 90% of the teachers reported some job stress, with 20 to 30% rating teaching as very stressful. The stressors perceived by teachers include difficult children, school administration/staff tension, oversized classes, work overload, lack of public concern, low salaries, isolation from peers, lack of personal support, expectations of parents, unsupportive parents, physical demands of teaching, and lack of control over school events (Blase, 1986; Byrne, 1992; Byrne, 1994; Dewe, 1986; Greer & Greer, 1993; Hock, 1988; Jenkins & Calhoun, 1991; Kagan, 1989; Kyriacou, 1987; O'Conner & Clarke, 1990; Wyly & Frusher, 1990).

Researchers have noted that individuals who experience prolonged and continual exposure to stressors and lack adequate coping strategies may succumb to a state of physical, emotional, and mental exhaustion, popularly known as burnout (Dunham, 1980, 1984). The concept of burnout first appeared in the psychological literature in the United

States in the mid-1970s (Freudenberger, 1974, 1975; Maslach, 1976). Counselors and researchers first identified the concept in employees in people-oriented, human service occupations, and human service occupations have remained the main focus of burnout research. In the 1980s theoretical models of burnout were introduced, and the first standardized burnout measures were developed. The definition of burnout most commonly used today was developed by Maslach and Jackson (Maslach & Schaufeli, 1993): "Burnout is a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people' work of some kind" (Maslach & Jackson, 1986, p. 1). This three-component model of burnout and the Maslach Burnout Inventory (Maslach & Jackson, 1981a, 1981b, 1986), an instrument designed to measure burnout, were developed through exploratory and psychometric research. The Maslach Burnout Inventory is the instrument that is most frequently used in research today (Schaufeli, Enzmann, & Girault, 1993).

Many consider burnout to be a problem among teachers. For example, of the Fresno County teachers who volunteered to participate in one study (Hanchey & Brown, 1989), 12% were rated as highly burned out (score of 9 or higher on the Maslach Burnout Instrument) and 60% as moderately burned out (score between 3 and 9 on the Maslach Burnout Inventory) on at least one of three testing occasions during the 1985-86

school year. Berg (1994) found 48.9% of respondents in a study of 193 nonadministrators in four suburban school districts scored in the high range of the normative data on at least one Maslach Burnout Inventory scale.

Most of the early research in teacher burnout was conducted in the United States (Borg, 1990), but in recent years considerable research has been conducted in other countries. The results have shown that teacher stress and burnout are international problems. Researchers have found that burnout is a problem in Venezuela (Kim, Navarro, & Medina, 1984), Nova Scotia (Fergusson, 1984), Australia (Laughlin, 1984; Sarros & Sarros, 1990), Norway (Mykletun, 1984), Switzerland (Huberman, 1993), Israel (Friedman & Farber, 1982), Malta (Borg & Riding, 1991), Hong Kong (Chan & Hui, 1995), Ireland (McGrath, Houghton, & Reid, 1989), and Britain (Borg, 1990). Studies in several countries that have compared teachers with people in other professions have found that teachers reported one of the highest levels of occupational stress (Cox & Brockley, 1984; Nerell & Wahlund, 1981, as cited in Kyriacou, 1987). Researchers have found that many of the stressors identified by teachers in the United States are identified by teachers in other countries (Fergusson, 1984; Huberman, 1993; Kim et al., 1984; Mykletun, 1984; Sarros & Sarros, 1990).

Researchers have found that teachers with high levels of burnout exhibit a lower level of tolerance for

frustration in the classroom, less sympathy toward students, fewer or less carefully constructed plans for classes, poor job performance, greater absenteeism, less commitment to teaching, the intention to leave teaching, greater turnover, lower job satisfaction, lower morale, and more feelings of anxiety, irritability, depression, and/or alienation than teachers with low levels of burnout (Berg, 1994; Byrne, 1994; Chan & Hui, 1995; Cherniss, 1980; Farber, 1984; Harris, Halpin, & Halpin, 1985; Maslach & Jackson, 1981b; Sarros & Sarros, 1992; Schwab, Jackson, & Randall, 1986; Shinn, 1982). Burnout is also related to poor physical health, illnesses, poor eating habits, and addiction to drugs including caffeine or alcohol (Austin, 1981; Cunningham, 1982; Fimian, Zacherman, & McHardy, 1985; Paine, 1981; Wangberg, 1981). Burnout therefore appears to be costly to the education system in terms of loss of talent and less effective instruction of students (Blase, 1986).

Appropriate coping strategies can ameliorate the effect of prolonged stress and prevent or postpone burnout (Dunham, 1980, 1984; Endler & Parker, 1989, as cited in Endler & Parker, 1990; McCrae & Costa, 1986). Use of inappropriate coping strategies, however, is related to psychological distress and physical illness outcomes, both indicators of burnout (Hanchey & Brown, 1989; Kobasa, 1982; Nowack, 1989; Pierce & Molloy, 1990). Byrne (1994) stated, "It now seems

clear that an individual's coping pattern is a key determinant in his or her proneness to burnout" (p. 668).

On the basis of the research on coping and burnout, Martinez (1989), Hanchey and Brown (1989), and Price (1988) have suggested that assisting teachers with developing appropriate coping styles might help to reduce the impact of their perceived stress and, thereby, their burnout. Jenkins and Calhoun (1991) compared a global approach to stress management in which all teachers were taught the same management skills to an individual approach. In the individual approach the instructors assisted each person in identifying a stressor and developing a plan for coping with that stressor. The individual approach, which included both active and cognitive coping styles, had a greater impact on the management of stress than did the global approach. Jenkins and Calhoun suggested that their findings indicate a need to tailor stress management programs to individuals.

Personality may be an important factor to consider in designing stress management programs. According to Byrne (1994), "there is growing evidence that personality factors may explain why individuals in the same work environment, having the same supervisor, and possessing the same educational and experience backgrounds often respond differently to the same stressors (p. 650). Lazarus (1990) stated that "appraisal [of stressful situations] and coping processes are influenced by personality traits . . .



consisting of what is important to people (their goals) and the ways they typically perceive, construe, and cope with stressful relationships with the world" (p. 42). Researchers have found that several personality variables such as self-esteem and cognitive style correlate with burnout (Byrne, 1994; Farber, 1991; Hipps & Halpin, 1990; Kagan, 1989; Kyriacou, 1987; Mazur & Lynch, 1989).

One of the individual or personal variables that correlates with burnout is personality type (Davis-Johnson, 1991; Garden 1985, 1988; Grimm, 1986; Hughes, McNellis, & Hoggard, 1987; Lemkau, Purdy, Rafferty, & Rudisill, 1988; Nattkemper, 1986; Rinke, 1989), as measured by the Myers-Briggs Type Indicator (MBTI-F; Briggs & Myers, 1962, 1977a; MBTI-G; Briggs & Myers, 1977b). The MBTI measures basic personality preferences concerning perception, judgment, orientation to life, and orientation to the outer world. Several researchers have also found that individuals with different personality types (MBTI) report using different coping styles when dealing with stress (Berube, 1992; Davis-Johnson, 1991; Grams & Olguin, 1991; Killpack, 1993; McGrath, 1993). Heikkinen (1986) has suggested that personality type as measured by the MBTI may have an impact on both the preventive and combative coping strategies that individuals use and has suggested that research needs to be done to explore connections between personality type and coping.

### Purpose of the Study

Although evidence has been found of correlations between personality type and burnout and between type and coping, no research has examined the question of whether individuals of a particular personality type tend to use specific coping processes that help to prevent burnout for those individuals. In other words, coping resources may mediate the relationship between personality type and burnout. The purpose of this study was to examine the relationships among personality type and coping processes on measures of burnout in elementary teachers.

### Hypotheses

The main hypothesis of this study was that coping resources mediate the relationship between personality type and burnout. The research literature supports the following specific predictions:

1. Extraversion is positively related to social, emotional, and cognitive resources.
2. A preference for feeling is positively related to social and emotional resources.
3. A preference for feeling is positively related to cognitive resources.
4. A preference for thinking is positively related to problem-focused resources.

5. The relationship between extraversion and Emotional Exhaustion is mediated by social, emotional, and cognitive resources.

6. The relationship between Depersonalization and judging is mediated by social support.

7. The relationship between feeling and Depersonalization is mediated by social, emotional, and cognitive resources.

### Significance of the Study

#### Theoretical Significance

Contemporary conceptions of coping emphasize the mediating role that it plays in the stress process but disagree as to whether coping is process-oriented or trait-oriented. Currently, the predominant view in the literature conceives of coping as process-oriented, due largely to the research of Lazarus and Folkman (1984), who believe that coping is a situation-specific process. The more traditional trait-oriented view conceives of coping as a personal predisposition to respond to stress in a characteristic way. For example, Hammer and Marting (1988) defined coping resources as "resources inherent in individuals that enable them to handle stressors more effectively, experience fewer or less intense symptoms upon exposure to a stressor, or to recover faster from exposure" (p. 21).

In this study I examined the question of whether personality type is associated with trait-oriented coping

resources that mediate the relationship between teachers' personality and burnout. If this research showed that teachers with different personality types tend to use characteristic coping resources that are related to their experience of burnout, preliminary evidence of the importance of a trait-oriented concept of coping as an explanatory construct would be provided.

### Practical Significance

As research has identified factors contributing to burnout, programs have been designed to alter the stressors or to educate teachers in methods of coping with the stresses. Most stress management programs have been designed to teach the same coping processes to all participants. It has been suggested, however, that tailoring programs to fit individual needs would make them more effective (Jenkins & Calhoun, 1991). Personality type, which differs among individuals and helps to explain each person's manner of perceiving, way of making decisions, orientation to the inner or outer world, and preference for decision-making or perceiving (Myers & McCaulley, 1985), might provide assistance in individualizing programs that teach coping. Personality type has been shown to be related to burnout (Davis-Johnson, 1991; Grimm, 1986; Garden, 1985, 1988; Hughes et al., 1987; Lemkau et al., 1988; Nattkemper, 1986; Rinke, 1989) and to the types of coping processes that individuals employ (Davis-Johnson, 1991; Grams & Olguin,

1991; Killpack, 1993; McGrath 1993). Information provided by the MBTI has been useful in designing stress management programs in business organizations (Elliott & Maples, 1991; Goodspeed & DeLucia, 1990) and other intervention and training programs in a variety of domains including counseling (Ditiberio & Hammer, 1982; Myers & McCaulley, 1985; Newman, 1979), career guidance (Martin, 1995; Miller, 1992; McCaulley & Martin, 1995; Myers & McCaulley, 1985), organizational team management (Docque, 1993; Kummerow & McAllister, 1988; Rideout & Richardson, 1989; Sample & Hoffman, 1986), problem-solving performance (Yokomoto & Ware, 1982), and teachers' perceptions of students diagnosed as having Attention Deficit Hyperactivity Disorder (Poillion, 1993). On the basis of these studies, there is reason to believe that the MBTI can provide information that will be useful in the design of teacher stress management programs. Information from this study has the potential to aid in the early identification of teachers who are vulnerable to high levels of burnout and may need assistance.

## CHAPTER 2 REVIEW OF THE LITERATURE

### Introduction

In this chapter, literature relating to four areas is reviewed. In the first section, the literature pertaining to burnout in teachers, including definitions, measurement, factors, and symptoms, is presented. The second section explains personality type as measured by the Myers-Briggs Type Indicator. The next section focuses on literature reporting the relationship between personality type and burnout. The fourth section contains a review of the literature on coping processes used by teachers, including definitions, categories, processes, relationship to burnout, correlations with personal factors, and training programs. Finally, the last section includes literature relating personality type to coping processes.

### Burnout

In 1974 Herbert Freudenberger introduced the term burnout into the psychological literature to describe a state of emotional exhaustion and a loss of motivation and commitment experienced by volunteers working with people with drug abuse problems. (Freudenberger, 1974, 1975; Maslach, 1976). Christina Maslach adopted the term to identify a phenomenon she was encountering in her studies of

medical personnel working with mental health patients (Maslach, 1976). While studying the methods that the medical personnel used to deal with emotional arousal, especially such strategies as detached concern, Maslach found that the medical personnel reported feelings of emotional exhaustion, depersonalization or detachment, and a negative self-assessment of professional accomplishment. Maslach broadened her research to include others in people-oriented occupations such as poverty lawyers, ministers, teachers, prison guards, and probation officers. She discovered similar phenomena among these people and though the context was different, they reported the same feelings of emotional exhaustion, depersonalization, and lack of personal accomplishment (Maslach & Schaufeli, 1993; Schaufeli et al., 1993).

Early research in the concept by Maslach and others was primarily nonempirical, focusing on describing the symptoms of burnout. Maslach and Susan Jackson developed a questionnaire to measure emotional exhaustion and depersonalization and found that a reduced feeling of personal accomplishment, which they had expected to be a part of the other two components, was actually a separate factor (Maslach & Schaufeli, 1993; Schaufeli et al., 1993). On the basis of this research, they defined burnout as "a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among

individuals who do 'people' work of some kind" (Maslach & Jackson, 1986, p. 1). The Maslach Burnout Inventory (Maslach & Jackson, 1981a, 1981b, 1986) was developed to measure the three components of emotional exhaustion, depersonalization, and feelings of personal accomplishment and is the instrument that is most frequently used in research today (Maslach & Schaufeli, 1993; Schaufeli et al., 1993).

Burnout as measured by the Maslach Burnout Inventory is conceptualized as a continuous variable ranging from a low to a high degree of burnout, represented by different patterns of scores on the three subscales. A low degree of burnout is represented by low scores on the Emotional Exhaustion and Depersonalization subscales and by a high score on the Personal Accomplishment subscale. A high degree of burnout is represented by high scores on the Emotional Exhaustion and Depersonalization subscales and by a low score on the Personal Accomplishment subscale. The subscales are only considered separately and are not combined into a single score (Maslach, 1993; Maslach & Jackson, 1986).

According to Schaufeli et al. (1993), the only other burnout instrument that has been extensively examined is the Burnout Measure (BM; Pines & Aronson, 1988) formerly known as the Tedium Measure (TM; Pines, Aronson, & Kafry, 1981). Pines and Aronson defined burnout from an existential perspective as "a state of physical, emotional and mental exhaustion caused by long term involvement in situations



that are emotionally demanding" (Pines & Aronson, 1988, p. 9). While acknowledging that a burned out individual may experience a sense of depersonalization and reduced personal accomplishment, Pines and Aronson have argued that it is emotional exhaustion that identifies burnout. They developed the Burnout Measure to evaluate burnout as emotional exhaustion on a single scale (Pines, 1993). Whereas the Burnout Measure is limited to measuring a single scale of burnout, emotional exhaustion, the Maslach Burnout Inventory measures emotional exhaustion, depersonalization, and feelings of personal accomplishment.

Factors that contribute to burnout have been grouped into three categories: organizational, interpersonal, and personal (Pierce & Molloy, 1990). In recent years organizational influences on burnout have been the main focus of research (Schaufeli et al., 1993). Organizational stressors that contribute to burnout in teachers include role conflict, role ambiguity, work overload, paperwork, oversized classes, students at different academic levels, noninvolvement in decision making, lack of support by administrators, lack of support by the community, lack of adequate salary, and a lack of recognition (Byrne, 1994; Fimian, 1987; Kagan, 1989; Kyriacou, 1987; Mazur & Lynch, 1989). According to Mazur and Lynch (1989), work overload is the most important occupational stressor.

As school systems have implemented reforms, researchers have studied the effect of the changes on burnout and stress in teachers. Sometimes reforms that are expected to help, create more stress in teachers, as has happened when teachers are given a larger role in decision-making in a way that creates more work for the teachers (Potter, 1995). Mandated accountability in Texas (Lutz & Maddirala, 1990) and the Alabama Performance-Based Accreditation System (Hips & Halpin, 1990) both contributed to burnout among teachers, whereas a year-round school schedule for academically at-risk students reduced reported stress in teachers (Campbell, 1994). Various other reforms such as the development of mini-schools, curriculum innovations, school-based management, career ladders, flexible scheduling, and team teaching can add to stress if not implemented properly (Farber & Ascher, 1991).

Interpersonal stressors are factors that involve the impact of relationships with other people on teachers and the role the social environment plays in burnout. Lack of support from others, the leadership style of the principal, verbal and physical abuse, student apathy, and student discipline problems are all interpersonal factors that may contribute to burnout (Brissie, Hoover-Dempsey, & Bassler, 1988; Byrne, 1994; Kyriacou, 1987; Pierce & Molloy, 1989). Student discipline problems were reported as the most stressful factors by 5,000 teachers in a study conducted in

Canada and the United States (Kuzsman & Schnall, 1987, as cited in Byrne, 1994).

The personal category of stressors includes demographic variables and personal variables such as personality factors, personal values, and health. Gender and grade level taught have been found to be factors in the experience of burnout. Males have reported experiencing more burnout than females (Connolly & Sanders, 1986; Greenglass, Burke, & Ondrack, 1990; Ogus, Greenglass, & Burke, 1990), and secondary school teachers have reported more burnout than elementary teachers (Borthwick, Thornell, & Wilkinson, 1982; Connolly & Sanders, 1986; Shearin, 1996).

Extent of teaching experience has not been found to be a consistent factor (Malik, Mueller, & Meinke, 1991; McIntyre, 1983). Schwab (1980) and Presley and Morgan (1981) found that years of experience was not a significant factor in predicting burnout. Other researchers found it to be a significant factor, but the effect varied among the studies. Several researchers (Connolley & Sanders, 1986; Parkay, Greenwood, Olejnik, & Proller, 1988; Remley, 1985; Zabel & Zabel, 1981) found that stress and burnout increased as years of experience increased, whereas Borthwick, Thornell, and Wilkinson (1982) found that burnout was greatest in the least experienced teachers. In addition, McIntyre (1981 as cited in McIntyre, 1983) and Liebes (1983) found the highest levels of burnout were reported not by the most or least

experienced teachers, but by teachers with intermediate levels of experience.

Several researchers have found a correlation between personality factors and burnout. Low self-esteem and high empathic self-concept are positively correlated with burnout (Kyriacou, 1987). Kagan (1989) found that teachers with a pragmatic, analytic, or realistic cognitive style reported a higher stress level than did teachers with a more idealist or nonanalytic style.

Some researchers have correlated specific stressors with the Maslach Burnout Inventory subscales. Crane and Iwanicki (1983) found positive correlations between role conflict and Emotional Exhaustion and Depersonalization, and Schwab and Iwanicki (1982) obtained positive correlations between role ambiguity and Emotional Exhaustion and lack of Personal Accomplishment.

Researchers have concluded that problems related to teacher burnout include a lower level of tolerance for frustration in the classroom, less sympathy toward students, fewer or less carefully constructed plans for classes, poor job performance, employee absenteeism, intention to leave teaching, employee turnover, lower job satisfaction, low morale, and feelings of anxiety, anger, paranoia, irritability, depression, and/or alienation (Cherniss, 1980; Farber, 1984; Maslach & Jackson, 1981a; Paine, 1981; Schwab et al., 1986; Shinn, 1982). Physical evidence of burnout in

teachers can be manifested in high blood pressure, increased heart rate, insomnia, loss of sexual interest, headaches caused by tense muscles, blurred vision, constipation, stomach spasms, and diarrhea (Austin, 1981; Cunningham, 1982; Paine, 1981; Wangberg, 1981). Addiction to over-the-counter drugs, prescription drugs, caffeine, and alcohol are associated with high levels of stress or burnout in teachers (Austin, 1981; Fimian et al., 1985; Paine, 1981). Over eating, under eating, or eating a non-nutritious diet are also problems associated with burnout (Austin, 1981; Wangberg, 1981).

To summarize, research on burnout suggests the following:

1. Burnout is most commonly defined as a state of emotional exhaustion, depersonalization, and a feeling of a lack of personal accomplishment, caused by an individual's prolonged exposure to stress without adequate coping resources and experienced by those working in human-service occupations.
2. Burnout is usually measured as a set of scores on three separate subscales, rather than as a single score.
3. Stressors that may contribute to burnout in teachers include organizational stressors, interpersonal stressors, and personal factors.
4. Symptoms of burnout include physical problems, attitude problems, and job problems.

### Personality Type

One of the individual or personal variables that correlates with burnout is personality type as measured by the Myers-Briggs Type Indicator (MBTI). Type theory states that "much seemingly random variation in behavior is actually quite orderly and consistent, being due to basic differences in the way individuals prefer to use their perception and judgment" (Myers & McCauley, 1985, p. 1). The Myers-Briggs Type Indicator was developed by Isabel Briggs Myers to make psychological type theory useful and easily understandable. It is based on C. G. Jung's (1921/1971) theory as interpreted and extended by Briggs and Myers (Myers & McCauley, 1985).

Katharine Briggs began her study of individual differences around 1915 by reading autobiographies and observing the behavior of people around her. She identified patterns in people's apparently random behavior and sought to understand the patterns. When she read Jung's Psychological Types she realized that many of his ideas corresponded with hers and she adopted his more complete formulation of type theory (Saunders, 1991). In his theory of typology, Jung (1921/1971) described four basic mental functions, two dealing with perception (sensing and intuition) and two with judgment (thinking and feeling). He also proposed the existence of two attitudes that are concerned with a person's relative interest in the world

(extraversion and introversion). Briggs and her daughter, Isabel Briggs Myers, accepted Jung's theory and extended it by adding two more preferences that are concerned with the way in which a person deals with the outside world (judging and perceiving) (Myers, 1980; Myers & McCaulley, 1985).

Through observations, interviews, and studies of Jung's (1921/1971) theory, Briggs and Myers identified behaviors and characteristics that they believed distinguished between people with different type preferences. They tested their hypotheses about these behaviors and characteristics through observations and interviews. In 1942 Myers started developing the first instrument to measure type preferences. The questions on the instrument concerned surface behaviors from which, they believed, deeper preferences could be inferred. The original questions were validated on a small group of friends and relatives whose type preferences seemed obvious to Briggs and Myers. The results of the testing and discussions with these people influenced which items were retained and the wording of the questions. Several versions of the MBTI were subsequently developed and tested. Form F (Briggs & Myers, 1962) was the first version to be published. Currently, Form G (Briggs & Myers, 1977b) is the standard version. A revised version of Form F (Briggs & Myers, 1977a) is still used by researchers and Form AV (Briggs & Myers, 1984), an abbreviated version of Form G, is used when a self-scoring format is desired and accuracy is

not as important (Center for Applications of Psychological Type, 1993; Myers & McCaulley, 1985).

#### Personality Type and Burnout

Various researchers have studied the relationship between personality type and burnout. In a sample of 269 members of the Society of Jesus, an order of the Roman Catholic Church commonly known as the Jesuits, Grimm (1986) investigated a variety of individual and environmental factors and their relationship to burnout. He found that personality type as measured by the MBTI explained a significant amount of variation in burnout as measured by the Maslach Burnout Inventory. Individuals with a preference for introversion and those with a preference for perceiving had significantly higher scores on a total burnout score Grimm calculated from the Maslach Burnout subscales. They also had significantly higher scores on Emotional Exhaustion and Depersonalization and significantly lower scores on Personal Accomplishment. These results all indicate more burnout.

Using an energy depletion index to measure exhaustion or burnout, Garden (1985, 1988) found correlations for engineers, managers, and nurses between certain symptoms of burnout and the preferred functions of sensing - intuition and thinking - feeling on the MBTI. Concerning their reactions to people, persons who preferred feeling reported that the more depleted of energy they were the stronger



their feelings of distancing and hostility. Individuals who preferred thinking reported as their energy depletion intensified their sense of concern for others became stronger. On a reality orientation scale, persons who preferred sensing reported a decreasing feeling of groundedness as their energy depletion increased more than did individuals who preferred intuition. Although some differences in symptoms correlated with occupation, the similarities within each type irrespective of occupation were greater than the differences that appeared between occupations.

In a sample of 118 community college counselors, Rinke (1989) found a correlation between the Personal Accomplishment subscale of the Maslach Burnout Inventory and the thinking-feeling preference, with individuals who preferred thinking reporting a lower sense of Personal Accomplishment than did those who preferred feeling. Though the sample size was too small to be reliable when divided into groups by the 16 type formulas, the results suggested possible correlations between certain preference combinations and burnout. Individuals who preferred dominant extraverted feeling (ENFJ and ESFJ) showed a lower degree of Emotional Exhaustion and Depersonalization and a higher degree of Personal Accomplishment than the average for the total group; results that indicate less burnout. Persons who preferred dominant introverted feeling (INFPs and ISFPs)

showed a higher score on Emotional Exhaustion and Depersonalization and a lower score on Personal Accomplishment than the average for the total group, indicating more burnout.

Using the MBTI, Nattkemper (1986) divided 127 nurses in a emergency trauma center into the four temperament groups defined by Keirse and Bates (1984). The temperament groups are sensing-judging, sensing-perceptive, intuitive-feeling, and intuitive-thinking. He found no significant differences between temperament types on the Emotional Exhaustion and Depersonalization subscales of the Maslach Burnout Inventory but did find that individuals who preferred intuition and thinking had significantly higher scores in both frequency and intensity of Personal Accomplishment than did all the other groups, signifying less burnout.

In a sample of 67 physicians doing their residency in family practice, several relationships were found among personality type preferences and burnout scores on the Maslach Burnout Inventory (Lemkau et al., 1988). Persons with a preference for perception scored significantly lower on the Emotional Exhaustion subscale. Those with a preference for feeling showed less Depersonalization, and individuals with a preference for extraversion or intuition scored higher on the Personal Accomplishment subscale. These results all indicate less burnout.

Among teachers, personality type preferences have been found to correlate with burnout and with scores on each of the three dimensions of burnout as measured by the Maslach Burnout Inventory. Hughes et al. (1987) found that teachers who preferred introversion, intuition, feeling, and perception (INFPs) had a significantly higher mean score on Emotional Exhaustion, and those who preferred introversion, sensing, feeling, and perception (ISFPs) had a significantly higher score on Depersonalization than did people with other preferences, which indicates more burnout in these groups. Persons who preferred extraversion, sensing, thinking, and perception (ESTPs) had a significantly higher score on Personal Accomplishment than did those with other preferences, which signifies less burnout. When the preferences were analyzed separately, introversion was significantly positively correlated with Emotional Exhaustion. When persons with a preference for perception were compared with individuals with a preference for judging, those who preferred perception had significantly higher scores on the Emotional Exhaustion and Depersonalization scales, which indicates more burnout in these areas; they also had significantly higher scores on Personal Accomplishment, which indicates less burnout in this area. Although she used the Pines-Aronson Burnout Measure, Davis-Johnson (1991) found similar results in a sample of 101 teachers, with individuals indicating a

preference for introversion and those indicating a preference for perception showing more professional burnout.

To summarize, the literature on burnout and personality type as measured by the MBTI suggests the following:

1. In general, individuals with a preference for extraversion appear to be less prone to burnout than those with a preference for introversion. Specifically, in comparison with persons with a preference for introversion, those with a preference for extraversion tend to report higher scores on Personal Accomplishment and lower scores on Emotional Exhaustion, both of which indicate less burnout.

2. Individuals who prefer thinking, when compared with those who prefer feeling, reported higher scores on Personal Accomplishment in two studies, indicating less burnout, and lower scores in another study.

3. One study found that individuals who prefer intuition scored higher on Personal Accomplishment, indicating less burnout. The only other significant results with the sensing-intuition scales occurred when the sensing-intuition preference was combined with the thinking-feeling function, the extraversion-introversion attitude, or the judging-perceiving attitude.

4. The individuals who preferred perception showed a mixed pattern, scoring higher on Emotional Exhaustion and Depersonalization in one study, both of which signify more burnout, but also scoring higher in the same study on

Personal Accomplishment, which signifies less burnout. Two other studies found individuals who preferred perception to be more vulnerable to burnout in general, whereas another study found them to be lower on Emotional Exhaustion, indicating less burnout.

5. The finding of such mixed patterns suggests that individuals with different personality types experience burnout in different ways.

### Coping

The terms coping style, coping traits, coping strategies, coping resources, and coping processes are all used in the literature on coping. Although often used interchangeably, these terms reflect different conceptions of coping. The most prevalent conception of coping in the research literature is process-oriented. Advocated by Lazarus and Folkman (1984), this view conceives of coping as situation-specific.

Lazarus and Folkman (1984) used the term coping strategies and defined coping as any effort made to manage stressful demands, regardless of outcome. This definition emphasizes that thoughts and actions intended to cope with stress are not necessarily effective. On the basis of their belief that coping should be conceived as a process rather than a trait, Lazarus and Folkman (1988) designed the Ways of Coping Questionnaire (originally named the Ways of Coping Checklist), which has been frequently used in research, to

measure an individual's use of coping strategies in a specific situation.

Coping strategies or processes have been divided into several categories with the most common distinction being made between direct action (Kyriacou, 1987) or problem-focused coping (Lazarus & Folkman, 1984) and palliative (Kyriacou, 1987) or emotion-focused coping (Lazarus & Folkman, 1984). Direct action or problem-focused coping includes processes that are directed outwardly, in an attempt to change the situation or environment. These processes are used when persons appraise the situation and believe that they can affect and change the source of the stress. Palliative or emotion-focused coping is used when persons believe that they cannot modify the conditions and so must accept the situation as it exists. Coping is then directed inwardly in an attempt to lessen the emotional distress caused by the situation by either changing the meaning of the event or avoiding or minimizing thinking about the situation (Kyriacou, 1987; Lazarus & Folkman, 1984).

Hammer and Marting (1988) differentiated between coping strategies and coping resources. They defined coping strategies as "things people do in reaction to a specific stressor in a specific context or in response to chronic stressors" (p. 21). In contrast, they defined coping resources as "resources that are inherent in individuals and

help them to handle stressors more effectively or to recover more quickly after being exposed to a stressor. [Coping resources are] predispositions derived from genetic factors, environmental factors and learned relationships" (p. 2). The Coping Resources Inventory (CRI, Hammer & Marting, 1988) was designed to measure coping resources in five domains: cognitive, social, emotional, spiritual/philosophical, and physical.

Dolan and White (1988) provided support for Hammer and Marting's (1988) trait-oriented approach to coping in their examination of the question of whether coping is situation specific. They studied coping processes used in various naturalistic settings over 25-30 different occasions in one sample of 25 professional women and a second sample of 28 college men. They found that the majority of people were consistent in their use of coping processes, especially when context was considered. Results also showed that among the women consistency of coping was positively correlated with effectiveness of coping.

Turnipseed and Turnipseed (1991) found that reported use of coping resources correlated with specific components of burnout. In a sample of 117 nurses, they compared scores on the Coping Resources Inventory with scores on the Maslach Burnout Inventory. They found significant negative correlations between emotional exhaustion and cognitive, physical, social, and total resources. Depersonalization

correlated negatively with physical and social resources. Personal accomplishment positively correlated (signifying less burnout) with all five of the individual scales and with total resources.

#### Personality and Coping Strategies

Correlations have been found between several dimensions of personality and coping processes. Optimism, neuroticism, extraversion, self-esteem, and hardiness are among the factors that have been studied.

In two different studies of college undergraduates ( $N=291$ ,  $N=100$ ), Scheier, Weintraub, and Carver (1986) studied the relationship of pessimism and optimism to coping. Correlations were found between optimism and problem-focused coping, seeking of social support, and emphasizing positive aspects of the stressful situation. Pessimism correlated with denial and distancing, with focusing on stressful feelings, and with disengagement from the goal with which the stressor was interfering. The second study found that when the event was perceived as uncontrollable, there was a correlation between optimism and acceptance/resignation. In a sample of 40 female graduate students, Rim (1990) found significant correlations between optimism and six coping strategies: minimization, suppression, seeking succorance, blame, substitution, and reversal.



In a sample of 104 female executives, Fry (1995) examined the correlations between perfectionism, humor, and optimism and the use of different coping processes and orientations. High levels of perfectionism were associated with instrumental coping processes and self-restructuring or preventive coping orientations. High levels of humor and optimism were correlated with the use of processes that relied on practical social support. Humor correlated with existential coping orientations, and optimism was associated with religious coping orientations.

During the development of a coping instrument, the COPE, Carver, Scheier, and Weintraub (1989) found that active coping, planning, positive reinterpretation, and growth were positively associated with optimism, external locus of control, self-esteem, and hardiness. Denial and behavioral disengagement correlated positively with trait anxiety and negatively with optimism, external locus of control, self-esteem, and hardiness. A sample of 476 was included in the locus of control and optimism studies and a sample of 162 was selected for the self-esteem, hardiness, and trait anxiety studies.

Neuroticism and extraversion are two other personality factors that have been found to correlate with coping processes. In two studies of community dwelling older adults ( $N=255$ ,  $N=151$ ), McCrae and Costa (1986) examined personality, coping, and coping effectiveness. They used the

NEO Personality Inventory, the Ways of Coping Checklist, and some additional questions. In both studies they found neuroticism correlated with the use of hostile reaction, escapist fantasy, self-blame, sedation, withdrawal, wishful thinking, passivity, and indecisiveness. Extraversion correlated with the use of rational action, positive thinking, substitution, and restraint. Open individuals were more likely to use humor and closed individuals were more likely to use faith. They also found that the coping strategies correlated with neuroticism tended to be the least effective strategies.

Parkes (1986) obtained similar results for extraversion in a sample of 135 first-year student nurses. He examined individual differences (extraversion and neuroticism), environmental factors, and situational characteristics as predictors of three self-report measures of coping (general coping, direct coping, and suppression). Extraversion, in interaction with perceived importance, correlated with direct coping.

In a sample of 50 premedical students who were under stress because of an entrance exam, Bolger (1990) found that neuroticism influenced coping efforts and increases in daily anxiety under stress. Two types of coping, wishful thinking and self-blame, correlated with neuroticism and anxiety.

### Coping Processes and Teacher Burnout

Many coping processes have been identified in the literature on teacher stress and burnout. They include physical processes such as relaxation (MacDonald, 1993; Price, 1990; Remer, 1984; Roberson & Rich, 1993), exercise (Dedrick & Raschke, 1990; Long, 1988; Martinez, 1989), sleep (Sparks & Hammond, 1981), and good nutrition or diet (Dedrick & Raschke, 1990; Remer, 1984). Emotion-focused processes include developing and using social support systems (Amirkhan, 1994; Dedrick & Raschke, 1990; Dewe, 1986; Huffstutter & Smith, 1989; Remer, 1984) that may consist of family members, friends, or colleagues. Emotion-focused coping also includes visual imagery (Philbin & Price, 1988; Price, 1990), self-praise (Marrou, 1988), expression of emotions (Houtman, 1990), comforting cognitions (Houtman, 1990), avoidance (Amirkhan, 1994; Houtman, 1990), and self-talk (Dedrick & Raschke, 1990). Problem-focused coping processes include development and implementation of an action plan (Luckner, 1990), goal setting, creative problem solving, and time management (Dedrick & Raschke, 1990). Seidman and Zagar (1991) suggested that the use of adaptive coping strategies such as hobbies is helpful.

The use of appropriate coping processes can reduce the effect of prolonged stress and prevent or postpone burnout (Dunham, 1980, 1984; Hanchey & Brown, 1989; Seidman & Zagar,

1991). Use of inappropriate coping processes, however, is related to psychological distress and physical illness outcomes, both indicators of burnout (Kobasa, 1982; Nowack, 1989; Pierce & Molloy, 1990; Seidman & Zagar, 1991).

Researchers have compared teachers who used various emotion-focused coping processes with those who used assorted problem-focused coping processes (Bhagat, Allie, & Ford, 1991; Chwalisz, Altmaier, & Russell, 1992; Haney & Long, 1989; Holt, Fine, & Tollefson, 1987; Innes & Kitto, 1989; Parkes, 1990). They found that teachers who used problem-focused coping processes had fewer symptoms of stress or burnout than did teachers who used emotion-focused processes.

Schonfeld (1990) investigated the relationship between coping measures, psychological distress, and job-related morale among 67 teachers. Five coping processes were studied: advice seeking, positive comparisons, selective ignoring, discipline, and direct action. Advice seeking and direct action were most consistently associated with lower levels of psychological distress, and positive comparisons and direct action were most consistently associated with higher morale. Unlike other researchers, Schonfeld found that a form of emotion-focused coping, selective ignoring, appeared to buffer the impact of adverse work environments on symptoms of psychological distress.

In studies using the Ways of Coping Checklist and the Maslach Burnout Inventory, researchers have found that certain coping strategies appeared to contribute to the level of burnout felt by the teachers (Chan & Hui, 1995; Connolly & Sanders, 1988). In a sample of 121 elementary and secondary school teachers, Connolly and Sanders (1988) found positive correlations between Emotional Exhaustion and confrontive coping, distancing, accepting responsibility, and escape/avoidance. Depersonalization showed a positive correlation with distancing and escape/avoidance. Personal Accomplishment showed a positive correlation with distancing and accepting responsibility and a negative correlation with escape/avoidance. Stepwise multiple regression showed that escape/avoidance and positive reappraisal contributed significantly to both Personal Accomplishment and Depersonalization. In a sample of 415 Chinese secondary school teachers in Hong Kong, Chan and Hui (1995) found that avoidant coping strategies correlated with all three components of the Maslach Burnout Inventory.

#### Educational Approaches for Developing Coping Processes

On the basis of the research on coping and burnout, Martinez (1989), Hanchey and Brown (1989), and Price (1988) have suggested that assisting teachers with developing certain coping processes might help to reduce the impact of their perceived stress and, thereby, their burnout. Articles and books have been written suggesting coping processes that

teachers should use (Carter, 1994; Dedrick & Raschke, 1990; Dewe, 1986; Dunham, 1994; Flint, 1982; Iwanicki, 1983; Kirk & Walter, 1981; Lowenstein, 1991; Matthews, Hill, & Casteel, 1985; Price, 1989; Scaros, 1981; Sparks & Hammond, 1981), and workshops for teachers on stress management and coping have been designed or proposed (Esteve & Fracchia, 1986; Forman, 1990; Moracco & McFadden, 1982; Remer, 1984; Riley, 1981; Seidman & Zager, 1992). Several authors (Gargiulo & Partin, 1980; Linville & Belt, 1982; Wendt, 1980) have suggested that teacher education programs should include stress management classes or workshops in which preservice teachers are taught coping techniques. Other authors (Esteve & Fracchia, 1986; Philbin & Prince, 1988) have proposed that working with first-year teachers to develop coping techniques would help to prevent teacher burnout.

Some methods of stress management training have been researched. Long (1988) divided 66 school personnel into three groups and gave one group an 8-week stress inoculation training program with an exercise component, one group the stress inoculation program without the exercise component, and one group the exercise component alone. All three programs reduced anxiety and teacher stress, but the stress inoculation training program with the exercise component was the most effective.

Friedman, Lehrer, and Stevens (1983) studied the interaction of locus of control and the effects of two

stress management strategies, directed lecture discussion and self-directed, on the stress level of 85 teachers. Both treatment groups were taught a combination of cognitive coping processes and relaxation techniques. Both management programs helped to reduce stress. Locus of control was not found to be a significant factor in the success of the programs.

Cecil and Forman (1990) randomly assigned 54 elementary and middle school teachers to one of three treatment groups: coworker support, stress inoculation training, or no-treatment control. They found that stress inoculation training was effective in reducing the teachers' stress, but the coworker support group was not.

Jenkins and Calhoun (1991) compared a global approach to stress management in which all teachers were taught the same management skills and an individual approach in which the instructors assisted each person in developing an individualized plan for managing a specific stressor ( $N=134$ ). The stress management plans included both active and cognitive coping styles. The individual approach had a greater impact on the management of stress than did the global approach. Jenkins and Calhoun suggested that their findings indicate a need to tailor such programs to the individual teacher.

To summarize, the literature on coping suggests the following:

1. Terms are not used consistently in the literature.

The most frequently used definition for coping strategies is any effort made to manage stressful demands in a specific situation, regardless of outcome (Lazarus & Folkman, 1984). In contrast, coping resources are defined (Hammer & Marting, 1988) as "resources that are inherent in individuals and help them to handle stressors more effectively or to recover more quickly after being exposed to a stressor" (p. 2).

2. Many different coping processes are identified in the literature. Use of appropriate coping processes helps to reduce the experience of stress, whereas use of inappropriate coping processes is associated with higher levels of burnout or stress.

3. A distinction is often made between problem-focused coping processes and emotion-focused processes. Teachers who use problem-focused coping processes have been found to have lower levels of stress and burnout than teachers who use emotion-focused processes.

4. Correlations have been found between dimensions of personality and coping processes.

5. It has been suggested by many that training and education in stress management could help teachers learn to use appropriate coping processes and thereby reduce the amount of teacher burnout.



### Personality Type and Coping Strategies

Several researchers have found that individuals with different personality types (MBTI) report using different coping styles when dealing with stress. Killpack (1993) administered the Ways of Coping Checklist and the MBTI to 180 people from the San Francisco area. There were 30 people from each of six different groups: heterosexual men, bisexual men, homosexual men, heterosexual women, bisexual women, and homosexual women. Killpack found correlations between extraversion and social support, judging and social support, introversion and avoidance, thinking and problem-focused coping, and judging and problem-focused coping. Also using the Ways of Coping Checklist, McGrath (1993) found a positive correlation between thinking and positive reappraisal and between judging and confrontive coping, accepting responsibility, and escape avoidance with a sample of 154 adults.

In a sample of 99 low-income non-college graduates, Berube (1992), using the Coping Resource Inventory (Hammer & Marting, 1988), found that extraversion and feeling were significantly positively correlated with social, emotional, and cognitive resources and that extraversion was significantly positively correlated with physical resources. Using both the Coping Resources Inventory and the Davis-Johnson Social Support Stress Index, Davis-Johnson (1991) found that individuals high on introversion and feeling

received lower scores in the total coping resources reported. Introversion was also related to deficits in self-disclosure, and perceiving was related to deficits in structuring.

Hammer (1989) studied the relationship between personality type and the Coping Resources Inventory in four different samples: 61 college counselors and college student peer counselors, 112 Danforth Associates, who are university faculty nominated by their peers as outstanding teachers, 27 MBA students, and 21 participants in a workshop on MBTI and stress. Significant positive correlations were found between extraversion-introversion continuous scores and social, emotional, and total coping resources in the associate and counselor samples. Significant positive correlations were found between extraversion and cognitive resources in the counselor sample with similar trends exhibited by the associate sample. In the stress workshop sample, although correlations were not statistically significant, trends were found in the same directions. However, correlations in the MBA sample suggested a positive relationship between cognitive resources and introversion.

A preference for feeling was positively correlated with high social, emotional, and total resources in the associates sample and with emotional resources in the MBA sample. There were no significant correlations with the judging-perceiving or sensing-intuition scores in any of the

samples, although there was a trend by those with a preference for judging towards higher scores on the spiritual/philosophical scale.

When individuals with a dominant extraverted feeling preference (ESFJ and ENFJ) were compared with those with a dominant introverted thinking preference (INTP and ISTP) in the associate sample, the individuals with a dominant extraverted feeling preference reported more social resources, whereas those with a dominant introverted thinking preference reported slightly higher physical resources. The sample sizes (7 for the Fs and 14 for the Ts) were very small.

When the MBTI cousin type pairs (sharing all preferences except the auxiliary) were rank ordered by their mean total resource score, individuals with dominant extraverted intuition (ENFP and ENTP) had the highest mean total resources and those with dominant introverted thinking (INTP and ISTP) had the lowest. When divided into the 16 type groups and ranked by total resource score, ENFPs ranked the highest. They also scored the highest in all of the resources except spiritual/philosophical where they ranked second. INTPs ranked last with the lowest scores in both social and emotional scales.

Grams and Olguin (1991) studied the relationship between personality type and coping in a sample of 181 students in an introductory community college psychology

course. The students were asked to report to what extent they thought they had been successful in dealing with a recent stressor and what coping processes they had used. Grams and Olguin then categorized the stressors, using the domains from the Coping Resources Inventory for the first divisions. They added a category for problem-focused or task specific coping and subdivided the cognitive category into avoidance, optimism, and self-esteem justification processes. Grams and Olguin found that individuals with a preference for extraversion and those with a preference for thinking reported a higher perceived degree of total coping, that individuals with a preference for feeling and those with a preference for intuition reported higher total stress scores, and that individuals with a preference for sensing reported that they coped with the situations better. Their results showed that those who preferred feeling reported using more cognitive coping strategies, especially avoidance and self-esteem justification strategies, than did those who preferred thinking. Introversion was related to the use of positive self-esteem strategies and thinking was related to the use of task-specific strategies.

In a sample of counselors ( $N=51$ ) and a sample of Danforth Associates ( $N=100$ ), scores on the Coping Resources Inventory were related to scores from the Myers-Briggs Type Indicator (Hammer & Marting, 1988). There were no significant correlations with the sensing-intuition,

thinking-feeling, or judging-perceiving scales. Extraversion was positively correlated with the social and emotional scales and with the total resources scale.

It is difficult to compare and summarize the research examining personality type and coping because the studies have used a variety of coping strategy instruments. However, the literature does suggest the following:

1. Individuals preferring extraversion when compared to those who prefer introversion report using more coping strategies and more social support as a specific coping strategy.

2. Although the results were mixed, persons who prefer thinking, as compared with those who prefer feeling, usually report using more coping strategies and more problem-focused or task-specific strategies.

3. The results have been contradictory concerning total number of coping strategies of individuals who prefer sensing or intuition.

4. Cognitive strategies, including self-esteem and avoidance, also appear to show mixed results in correlations with the various personality type preferences.

### Conclusion

Burnout occurs when individuals without adequate coping strategies experience prolonged and continual exposure to stressors. It is characterized by feelings of emotional exhaustion, depersonalization, and reduced personal

accomplishment. The symptoms of burnout include physical, psychological, and work problems. Researchers have found that burnout is a problem among teachers in the United States and other countries. Many factors have been identified as affecting the stress or burnout levels of teachers.

Coping is defined as processes used by individuals in an effort to manage stress and prevent or postpone burnout. Contemporary theorists disagree as to whether coping is process-oriented or trait-oriented. Many coping processes used by teachers have been identified. Some coping processes correlate negatively with burnout, whereas others correlate positively. In general, problem-focused coping appears to be more effective than emotion-focused coping. Stress management programs that help teachers to develop appropriate coping processes can reduce teacher anxiety, stress, and burnout. Designing such programs on an individual basis can be more effective than using the same program for everyone.

Some dimensions of personality have been found to correlate with burnout and also with the kind of coping processes used. Personality type as measured by the MBTI is one of these dimensions.

Current coping research emphasizes the mediating role that coping plays in the stress process. Under the traditional trait-oriented view, coping is conceived of as a

disposition to respond to stress in characteristic ways. If coping resources are predispositions and are associated with personality type, they may mediate the relationship between personality type and burnout. Research is needed that examines the question of whether teachers with different personality types tend to use characteristic coping resources that affect their experience of burnout.

## CHAPTER 3 RESEARCH METHODOLOGY

### Introduction

In this chapter, the design of this study is explained. The first section discusses the selection of the research participants. The second section describes the instruments that will be used, the Myers-Briggs Type Indicator, the Coping Resources Inventory, the Maslach Burnout Inventory, and the Stress Assessment Profile. The procedures for the study are specified in the third section. Finally, the data analysis is discussed.

### Research Participants

One hundred eighty-nine female elementary teachers participated in the study. In studies that include both elementary and secondary teachers, evidence shows that gender may influence burnout, with males more likely to experience burnout on the depersonalization scale (Connolly, & Sanders, 1986; Greenglass et al., 1990; Ogus et al., 1990). Males report more stress and are less likely to employ coping techniques. Also, there is evidence that gender may influence the type of coping strategies used (Ptacek, Smith, & Dodge, 1994). Taking into consideration this evidence and the difficulty of obtaining an adequate sample of males in the predominantly female profession of



elementary teaching, only female teachers were asked to participate in this study. The population was limited to elementary teachers, as there is evidence that major stressors and the level of burnout differ for elementary and secondary teachers (Borthwick et al., 1982; Connolly & Sanders, 1986).

The results of research linking years of teaching experience to burnout or stress are inconsistent (Borthwick et al. 1982; Connolly & Sanders, 1986; Liebes, 1983; Malik et al., 1991; McIntyre, 1983; Parkay et al., 1988; Remley, 1985). Because the relationship between teaching experience and burnout is unclear, I controlled for teaching experience in the analysis.

### Instruments

The instruments used in this study are the Myers-Briggs Type Indicator Form F (MBTI-F) (Briggs & Myers, 1977a), the Maslach Burnout Inventory Form Ed (MBI-Ed) (Maslach & Jackson, 1986), the Coping Resources Inventory (CRI) (Hammer & Marting, 1988), and the problem-focused coping subscale from the Stress Assessment Profile (SAP) (Nowack, 1991).

#### The Maslach Burnout Inventory

The Maslach Burnout Inventory Form Ed (MBI-Ed) is a 22-item, 7-choice Likert scale instrument that contains three subscales: Emotional Exhaustion, Depersonalization, and Personal Accomplishment, each designed to measure a different aspect of the burnout syndrome. The only

difference between the MBI and the MBI Form Ed is that the word recipient has been changed to student in the latter because students are a teacher's recipients. Factor analytic studies have supported the three-factor structure of the MBI (Byrne, 1993; Green, Walkey, & Taylor, 1991; Gupchup, Lively, Holiday-Goodman, & Siganga, 1994; Pierce & Molloy, 1989) and the three-factor structure of the MBI Form Ed (Gold, 1984; Iwanicki & Schwab, 1981). Byrne (1994) tested a three-factor model of burnout and concluded that "interpretations of burnout as a unidimensional construct are not meaningful" (p. 645).

Internal consistency of scores on the MBI Form Ed was estimated in two studies using Cronbach's coefficient alpha. In a sample of 469 Massachusetts teachers, Iwanicki and Schwab (1981) reported estimates of .90 for Emotional Exhaustion, .76 for Depersonalization, and .76 for Personal Accomplishment. In a sample of 462 California students, Gold (1984) reported estimates of .88 for Emotional Exhaustion, .74 for Depersonalization, and .72 for Personal Accomplishment.

Test-retest reliability estimates are not available for the MBI-Ed, but they are expected to be similar to those of the MBI. Test-retest reliability estimates of the MBI at a testing interval of 2 to 4 weeks were reported in a sample of graduate students in social welfare and administrators in a health agency ( $N = 53$ ) as .82 for Emotional Exhaustion,

.60 for Depersonalization, and .80 for Personal Accomplishment; all of these coefficients were significant beyond the .001 level (Maslach & Jackson, 1986). In a sample of 248 teachers the testing interval was 1 year, and the coefficients were .60 for Emotional Exhaustion, .54 for Depersonalization, and .57 for Personal Accomplishment (Jackson, Schwab, & Schuler, 1986).

Maslach and Jackson (1986) reported that convergent validity has been investigated using several methods. Correlations have been found between various aspects of jobs, such as size of caseloads, and burnout as measured by the MBI (Hackman & Oldman, 1974, 1975, as cited in Maslach & Jackson, 1986; Maslach & Jackson, 1984). Correlations have also been found between an individual's report on the MBI and behavioral ratings of the individual completed by outside observers (Jackson & Maslach, 1982, as cited in Maslach & Jackson, 1986; Maslach & Jackson, 1979). In other studies (as cited in Maslach & Jackson, 1986), characteristics such as insomnia, desire to leave one's job, impairment of relationships and increased use of alcohol and drugs showed a positive correlation with Emotional Exhaustion and Depersonalization and a negative correlation with Personal Accomplishment.

Evidence of discriminant validity has included distinguishing MBI scores from measures of job satisfaction. Although scores on these measures were hypothesized to have

a low to moderate correlation, it was predicted that the correlation would not be high enough to suggest that both instruments measured the same construct. As reported in Maslach and Jackson (1986), low to moderate negative correlations have been found for social service workers, mental health workers, lawyers, and rehabilitation workers. MBI scores have not shown significant correlations with scores on the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), indicating that burnout is not influenced by a social desirability response set (Maslach & Jackson, 1986).

#### The Myers-Briggs Type Indicator (MBTI)

The Myers-Briggs Type Indicator - Form F (166 items) is a self-report, forced-choice instrument designed to measure personality type as described by Carl G. Jung (1921/1971) and extended by Katherine Briggs and Isabel Briggs Myers (Myers & McCaulley, 1985). The MBTI includes four dichotomous indices each of which represents one of four basic preferences concerning the use of perception and judgment: (a) extraversion (E) or introversion (I), (b) sensing (S) or intuition (N), (c) thinking (T) or feeling (F), and (d) judging (J) or perceiving (P) (Myers & McCaulley, 1985). The choices for each question represent the dichotomous poles of a preference and are written in terms of everyday events. The responses are weighted 0, 1, or 2 depending on the prediction ratio of the response, and

the weighted scores are totaled to give the person a score on each side of the dichotomous scales. The direction of the preference is indicated by the side of the dichotomous scale that has the higher score and is represented by the appropriate letter (E or I, S or N, T or F, and J or P). The four letters that represent a person's preferences are referred to as the type formula or the type of the person (Myers & McCaulley, 1985). Although some researchers have used continuous scores, the poles of the type scales theoretically indicate qualitative and fundamental differences, and the MBTI is designed to measure dichotomous variables (Carskadon, 1979).

A formula is applied to the difference between the points for each side of the dichotomous scale to produce a preference score, a numerical score that indicates the strength of the preference for using that function or attitude. The preference score does not indicate the extent to which people have developed the skills associated with that preference, only their reported partiality for using the preference (Myers & McCaulley, 1985).

Intercorrelations between scales are low except for the relationship of the S-N scale and the J-P scale that ranges from .26 to .47 (Sundberg, 1965). Gender and the judging preference (T-F) are correlated. Males are more likely to report a preference for thinking (60%) and females for feeling (60%) (Myers & McCaulley, 1985).

According to type theory, reliability of scores on the MBTI will vary due to personal characteristics of the individuals who respond to the instrument. Understanding of self, development of good judgment and perception, and intelligence are all assumed to affect the reliability of MBTI scores. Older individuals who have had a longer time to develop their perception and judgment and their understanding of self are expected to have more reliable scores. Development of perception and judgment is also expected to be correlated with level of achievement and possibly with higher IQ scores, and so those persons with a higher level of achievement and higher IQ scores are expected to report their types more consistently. Also, people with higher IQ scores tend to have a higher reading level and so may have a better understanding of the vocabulary of the MBTI, and this may affect reliability of their scores. As judgment is considered to be the most difficult of the functions and attitudes to develop, the reliability of scores on the judgment scale is predicted to be lower than for the scores on the other scales. Evidence that these assumptions are correct has been found in studies of the reliability of scores on the MBTI (Myers & McCaulley, 1985).

To measure internal consistency, split-half reliabilities have been computed on samples that are in the data bank at the Center for Applications of Psychological

Type (Form F:  $N = 55,971$ , Form G:  $N = 32,671$ ). Items were selected for the X and Y halves by pairing items that closely resemble each other, taking into consideration the weighting of the responses and the expected frequency of responses. As expected, reliabilities of the scores for people in their teens were somewhat lower, stabilized as people reached their 20s, and then remained consistent. Reliability of the scores also varied by school achievement level with high-achieving students (defined as those in gifted classes, in advanced placement classes, or National Merit finalists) and those in college preparatory courses obtaining scores showing higher reliability than lower-achieving students and those in non-college preparatory courses (Myers & McCaulley, 1985). In one sample of students in grades 7 through 12, those with higher IQ scores demonstrated more consistent MBTI scores (McCaulley & Natter, 1974, as cited in Myers & McCaulley, 1985).

For the adult population, internal consistency coefficients computed using product-moment correlations of X and Y continuous scores with Spearman-Brown prophecy formula correction vary from a low of about .80 to a high of .90 (Myers & McCaulley, 1985). The split-half reliabilities most pertinent to this research, from a study of adult college graduates ( $N = 9,182$ ), are EI scale .84, SN scale .90, TF scale .88, and JP scale .88 (Myers & McCaulley, 1985).

Test-retest reliability estimates of the MBTI are reported for both the individual dichotomous scales and the overall type. The test-retest correlation coefficients for the individual scales vary according to the test-retest interval and the particular scale examined. As had been predicted, in many of the samples the TF scale, which measures judgment, showed the lowest test-retest agreement. As reported in Myers and McCaulley (1985), test-retest correlations vary from .45 (4 years, medical students, TF scale) (Harris, 1981, as cited in Myers & McCaulley, 1985) to .93 (4 weeks, mood-manipulation study control, EI scale) (Howes & Carskadon, 1979). Especially pertinent to this research, one sample of elementary teachers ( $N = 94$ ), who completed the MBTI after a 6-year test-retest interval, showed the following percentages of agreement; EI 83%, SN 89%, TF 90%, JP 90% (Wright, 1967, as cited in Myers & McCaulley, 1985). In a study of mood manipulation (depressing or elevating), no significant correlation was found between mood change and test-retest reliabilities of MBTI scores (Howes & Carskadon, 1979).

Test-retest reliability has also been examined in terms of the number of preferences that are unchanged from the original four. As reported by Myers and McCaulley (1985), the percentages of persons for whom all four preferences were unchanged upon retest varied from a low of 31% (Auburn sophomores, 2-year interval) to 61% (elementary teachers, 6-



year interval). Several studies have examined the number of changes reported by respondents who originally had low, moderate, or high preference scores. The results show a trend for the most changes to occur among people who originally showed a low preference score (Howes & Carskadon, 1979).

To measure construct validity, the MBTI scales have been compared with scales of many other personality measures, and correlations have been found in the expected directions. As cited in Myers and McCaulley (1985), the measures examined include the California Psychological Inventory, the Adjective Checklist, the Edwards Personality Preference Survey, the Comrey Personality Scales, the Eysenck Personality Questionnaires, the Sixteen Personality Factor Questionnaire, and the Personality Research Inventory.

Convergent validity has also been demonstrated between the MBTI scales and the corresponding scales of the Jungian Type Survey (JTS) or Gray-Wheelwright (Wheelwright, Wheelwright, & Buehler, 1964, as cited in Myers & McCaulley, 1985). The Jungian Type Survey was developed by Jungian analysts with the purpose of identifying Jungian types. It includes scales that are intended to measure the same preferences as the EI, SN, and TF scales of the MBTI. Correlations between the scales have been calculated for two

small samples and vary from .55 to .79 (Rich, 1972, as cited in Myers & McCaulley, 1985).

In education, correlations have been found between type and aptitude, learning style, interest, and achievement. Correlations have also been found in other fields, such as counseling, where psychological treatment modes preferred by patient and therapist have been found to correlate with type, and in organizations and businesses, where type has been found to correlate with rank and management style (Myers & McCaulley, 1985).

Correlations have been found between type and occupational interest surveys such as the Strong-Campbell Interest Inventory (Campbell & Hansen, 1981, as cited in Myers & McCaulley, 1985) and the Kuder Occupational Interest Survey (Kuder, 1968, as cited in Myers & McCaulley, 1985). In a wide variety and number of occupations, correlations have also been found between type and the selection of career. Within certain occupations, specialization has also been found to correlate with type (Macdaid, McCaulley, & Kainz, 1986).

As reported by Myers and McCaulley (1985), many behaviors have been found to correlate with type including creativity, memory task performance, perception of emotions, volunteerism for social service, orientations to time, interest in fantasy and imagery, preference for privacy, optimism and pessimism, and anxiety and conformity.

Recently, correlations have been found between the EI and SN scales of the MBTI and evoked related potentials (Laposky, Wilson, & Languis, 1991; Wilson & Languis, 1990).

Examination of the MBTI within the five-factor model of personality using factor analysis has shown that the four scales of the MBTI correlate with four of the five proposed factors (McCrae & Costa, 1989). As predicted, the factor of Neuroticism does not correlate with any of the MBTI scales. Although Sippes, Alexander, and Friedt (1985) found six factors in their study ( $N=1,291$ ), four of which resembled the four scales of the MBTI, additional studies (Thompson & Borrello, 1986; Tzeng, Outcalt, Boyer, Ware, & Landis, 1984; Uhl & Day, 1993) have confirmed the four-factor structure. Tischler (1994) performed a factor analysis on a sample of 2,143 working adults and found support for a four-factor solution and strong evidence of a good item-to-scale structure. Results from a study ( $N=1,091$ ) by Harvey, Murry, and Stamoulis (1995) provided qualified support for the four-factor model. The qualifications arose because the best-fit models were below the maximum desirable values. They also conducted exploratory factor analyses and these analyses strongly supported a four-factor view of the MBTI and indicated several additional factor loadings that could be freed to improve model fit.

Pittenger (1993) questioned many aspects of the MBTI. A couple of his views are shared by other MBTI users such as

the concern about the precision at the midpoints of the preference scales and the bimodality of the preference scales. The most recently published version, Form M (Myers, 1998), uses item response theory (IRT) for scoring. The use of IRT has improved both the bimodality and the precision at the midpoints. However, most of Pittenger's criticisms are contrary to the opinions of other reviewers and researchers. Hammer (1996) rebutted Pittenger's criticisms concerning the four-factor model, test-retest reliability, and validity of the MBTI. Other reviewers (Coan, 1978; Devito, 1985; Mendelsohn, 1965; Willis, 1984) have stated that the test-retest reliability scores of the MBTI are comparable to those of similar self-report instruments and that there is a substantial body of data supporting the validity of the MBTI.

#### The Coping Resources Inventory

The Coping Resources Inventory (CRI) (Hammer & Marting, 1988) is based on the traditional trait-oriented view that conceives of coping as an individual predisposition to respond to stress in a particular manner. The CRI is a 60-item, 4-choice Likert scale instrument that measures coping resources in five domains: cognitive, social, emotional, spiritual/philosophical, and physical. A total resources score is also computed by summing the five scales. Raw scores are converted to standard scores with a mean of 50 and a standard deviation of 10. Gender differences in coping

resources are reflected in separate normative tables (Hammer & Marting, 1988).

The domains that are measured were selected based on the authors' experiences with individual clients and with conducting stress programs. The items on the CRI are written in terms of statements about behaviors, beliefs, or feelings. Respondents are asked to indicate how often they have engaged in the behaviors during the last 6 months or how frequently they felt that the statements applied to them (Hammer & Marting, 1988).

A CRI profile can be interpreted in two ways. It can be used to identify an individual's high-, moderate-, and low-level resources and this information can be used in counseling the individual. Scores can also be interpreted normatively, although normative interpretations should be made with caution because the normative samples are small and lack diversity. Scores should be interpreted within the context of the individual's family, job, and physical health (Hammer & Marting, 1988).

Test-retest reliability data are available for only one sample of 115 high school students at a 6-week testing interval. The estimates varied from a low of .60 for the spiritual/philosophical scale to a high of .78 for social resources (Hammer & Marting, 1988).

Internal consistency reliabilities were estimated for several samples using Cronbach's alpha. The coefficients for

the college student and adult samples varied from .77 to .93. When the internal consistency coefficients of high school, college age, and adult samples were compared, a positive correlation was found between age and the reliability estimates.

The intercorrelations of the CRI scales reveal some overlap between the cognitive, social, and emotional scales. This overlap is greater among males than among females.

The multitrait-multimethod procedure has been used to provide estimates of convergent and divergent validity. To measure convergent validity, scores on the CRI were compared with self-ratings of coping resources. The correlations for the same traits across methods range from .61 for the spiritual/philosophical scale to .80 for the physical. As reported by Hammer and Marting (1988), convergent validity was also studied by comparing the CRI with the Personal Stress Symptom Assessment and the Stress Test For Children. The total resources score and the scores for the individual coping resources from the CRI accounted for a significant amount of the variance of the stress symptoms reported on the other measures.

Concurrent validity was estimated based on correlations of the CRI scales with other variables. As cited by Hammer and Marting (1988), some of the instruments that were compared were the Stress Test for Children, Personal Stress Symptom Assessment, Brief Symptom Inventory, Health and

Daily Living Form, and the Texas Grief Inventory. The scores measuring stress were negatively correlated with CRI scores, whereas physical and psychological health status were positively correlated with the CRI scales (Hammer & Marting, 1988).

According to Hammer and Marting (1988), discriminant validity has been studied by comparing control groups with groups that are expected to have depleted resources because of stress, life events, or illness or with groups predicted to have higher resources because of participation in stress management training. Healthy college students ( $N=61$ ) had higher mean scores on the cognitive, social, spiritual/philosophical and physical scales than did students with health problems ( $N=77$ ). Cardiac and pulmonary rehabilitation patients ( $N=86$ ) when compared with a control group ( $N=232$ ) had lower cognitive, emotional, physical and total resources scores. Stress center clients ( $N=33$ ) had significantly lower social and physical resource scores than did a random sample of the adults included in the normative sample. When compared with a random sample of college students, college counseling center clients ( $N=14$ ) had significantly lower cognitive and total resources scores and lower scores on the other resource scales, although the differences did not reach significance. College student resident advisors and high school peer counselors were expected to have higher scores on the CRI than the general

population of their schools due to their selection and training. The resident advisors scored significantly higher on social, spiritual/philosophical, and total resources. The peer counselors scored higher on cognitive, social, emotional, spiritual/philosophical and total resource scales.

Scores on the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) were correlated with the scores on the CRI scales, and no significant correlations were found (Hammer & Marting, 1988). This suggests that CRI scores are not influenced by social desirability.

#### The Stress Assessment Profile

Problem-focused coping processes are often mentioned in the literature as effective coping processes (Bhagat et al., 1991; Chwalisz et al., 1992; Innes & Kitto, 1989; Parkes, 1990). The Stress Assessment Profile (SAP) (Nowack, 1991) is a 123-item, 5-choice Likert-scale instrument that includes a total of 15 scales. The Cognitive Coping Styles scale has four subscales, including one that measures problem-focused coping. Because the Coping Resources Inventory does not include a scale to measure problem-focused coping and this appears to be an effective process, I used the problem-focused coping subscale of the SAP in this study. The SAP and the Coping Resources Inventory are both based on a trait-oriented concept of coping.



The problem-focused subscale is a 5-item, 5-choice Likert scale that was theoretically derived and based on health psychology literature. In a sample of 466 employees attending management training workshops, internal consistency reliability for problem-focused coping was estimated as .69 (Nowack, 1990). In the same sample, no significant correlations were found between problem-focused coping and age, gender, or education. Test-retest reliability estimate for problem-focused coping was .68 in a sample of 1,530 employees in manufacturing, aerospace, communications and health care organizations with a 2-week testing interval (Nowack, 1990).

Moderately high correlations exist between the problem-focused subscale and other scales of the SAP that are theoretically associated with it such as social support (.23), Type A behavior (.15), and cognitive hardiness (.23). Correlations were also found between problem-focused coping and the other coping subscales, intrusive positive thoughts (.49), intrusive negative thoughts (.22), and avoidance (.38). As predicted, small correlations were found between problem-focused coping subscale and the stress (.01) and health habits (.08) scales.

Nowack and Pentkowski (1994) used the Stress Assessment Profile and the Maslach Burnout Inventory to examine relationships between lifestyle habits, substance abuse (cigarettes, alcohol, and recreational drugs), and burnout

in a sample of 879 professional women working in dental health offices. Problem-focused coping on the SAP contributed significantly to predictions of Personal Accomplishment on the Maslach Burnout Inventory, but not to Emotional Exhaustion or Depersonalization.

#### Procedures

I contacted elementary school principals in Alachua, Baker, Duval, Marion, Nassau, and Suwannee counties through the Crown Consortium newsletter and by phone. The Crown Consortium is a cooperative association of 20 school districts in Florida formed to provide leadership development and school improvement services. I explained my research to the principals and offered to do a free feedback workshop explaining the MBTI to the teachers in their schools in exchange for the teachers' participation in this study. During the first session at each school the Myers-Briggs Type Indicator, the Coping Resources Inventory, the Problem-Focused Coping subscale from the Stress Assessment Profile, and the Maslach Burnout Inventory-Form Ed were administered to the teachers. I gave a brief explanation of the research to the teachers before administering the instruments, assured them of the confidentiality of the results, and asked them to be as honest as possible. Participants signed a letter of consent, agreeing that their data would be used in this study. The letter assured participants that their data would be kept confidential to

the extent provided for by the law and briefly explained the study to them (see Appendix).

The instruments were administered at 14 sites to groups of 6 to 78 school personnel. A total of 333 people participated, but only 189 met the criteria for this study. One session was held during a county-wide teacher in-service day. The others were held as in-school workshops, usually on early dismissal days. Participation was voluntary, but most of the available teachers did participate. Many of the teachers were given in-service points by their schools for their participation.

For the county-wide session, both the administration of the instruments and the feedback session were conducted on the same day. For the other groups, the instruments were administered on one day, and I returned another day for the follow-up session. During the follow-up session I explained the MBTI to the group, did several group activities, and conferred with individuals about their personal results.

#### Data Analysis

This study was designed to test the hypothesis that coping resources mediate the relationship between personality type and burnout (see Figure 1). Path analysis was used to examine this hypothesis. As this study involves mediation, the following sets of regression equations were estimated: regressing personality type on each of the coping resources and regressing each of the dimensions of burnout

on personality type, coping resources, and teaching experience.

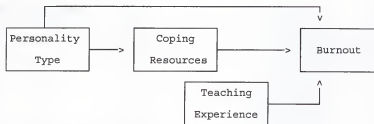


Figure 1. A Path Diagram

For the first set of equations, the four personality type scales (MBTI) were dichotomous independent variables, and the five coping resource scores (CRI) and the problem-focused coping score (SAP) were continuous dependent variables. For the second set of equations, the four personality type scales (MBTI) were dichotomous independent variables, and the five coping resource scores (CRI), the problem-focused coping score (SAP), and years of teaching experience were continuous independent variables. The three dependent continuous variables were the scores on the subscales of the Maslach Burnout Inventory.

## CHAPTER 4

### RESULTS

The purpose of this study was to examine the relationships among personality type, coping resources, and burnout in elementary teachers. The main hypothesis was that coping resources mediate the relationship between personality type and burnout.

The Myers-Briggs Type Indicator, the Maslach Burnout Inventory, and the Coping Resources Inventory were administered to 189 teachers. The results were analyzed for the mediation model using regression analysis on SAS. Exploratory cluster analyses were done using SPSS.

#### Descriptive Statistics

The sample in this study comprised 189 teachers from 14 elementary schools. All of the teachers were regular elementary classroom teachers, teaching levels from kindergarten through fifth grade. The schools were public elementary schools in northeast Florida.

Teachers with less than 1 year of experience were not included in the analysis, because some of the teachers were tested early enough in the school year that I thought the new teachers had not had adequate time to burn out. Of the teachers included in the analysis, years of teaching experience varied from 1 to 39 with a mean of 15.86,

indicating that most of them were experienced teachers. Years of experience was not a significant factor in any of the analyses in this study.

Table 1 shows the personality types distribution of a norming sample of elementary teachers ( $N = 804$ ) (Myers & McCaulley, 1985). In this study, each of the 16 personality types was represented by at least one person (see Table 2). The personality types of the sample in this study were compared with the norming sample using the Selection Ratio Type Table computer program (Granade & Myers, 1987). (See Table 3.) The SSRT correlates a sample with an expected population or another population, comparing observed frequency to expected frequency. The sample in this study was significantly more introverted, sensing, and feeling. There were significantly more ISFJs and significantly fewer ENTJs in this sample than in the norm sample.

As shown in Table 4, the means on the MBI subscales for the sample of teachers in this study were all within one standard deviation of the means for a larger sample of teachers ( $N = 4,163$ ) as shown in the Maslach Burnout Manual (Maslach & Jackson, 1986). According to these figures, the sample in this study reported an average amount of burnout for teachers.

The means for the CRI scales ranged from 46.70 to 56.21, as shown in Table 5. These means are all more than a standard deviation above the norms given for females in the

Table 1

## Type Table of Elementary Teachers

SENSING		INTUITION		Type	N	%
THINKING	FEELING	FEELING	THINKING			
<b>ISTJ</b>	<b>ISFJ</b>	<b>INFJ</b>	<b>INTJ</b>	J	E	415 51.62
N =	N = 144	N = 41	N = 17	U	I	389 48.38
% = 10.70	% = 17.91	% = 5.10	% = 2.11	D	S	503 62.56
■■■■■■■■■	■■■■■■■■■	■■■■■	■■	G	N	301 37.44
■	■■■■■■■■■			M	T	258 32.09
				I	F	546 67.91
				N	J	556 69.15
				T	P	248 30.85
				R		
				O	IJ	288 35.82
				V	IP	101 12.56
				P	EP	147 18.28
				E	EJ	268 33.33
				R		
				S		
				C	ST	175 21.77
				I	SF	328 40.80
				O	NF	218 27.11
				N	NT	83 10.32
				P		
				T		
				I		
				O		
				N		
					SJ	398 49.50
					SP	105 13.06
				J	NP	143 17.79
				U	NJ	158 19.65
				D		
				G		
				M	TJ	213 26.49
				E	TP	45 5.60
				X	FP	203 25.25
				N	FJ	343 42.66
				T		
				R		
				A		
				V		
				P	IN	107 12.17
				E	EN	194 13.23
				R	IS	282 47.62
				S	ES	221 26.98
				C		
				I		
				O		
				N	ET	129 16.04
				P	EF	286 35.57
				T	IF	260 32.34
				I	IT	129 16.04
				O		
				N		

Elementary Teachers from the MBTI Manual  
(Myers & McCaulley, 1985) N = 804

S dom 283 35.20  
N dom 152 18.91  
T dom 136 16.92  
F dom 233 28.98

Table 2

Type Table for Teachers in the Study

SENSING		INTUITION		J U D G M E N T	I N T R O V P E R S I O N	Type	N	%
THINKING	FEELING	FEELING	THINKING					
<b>ISTJ</b>	<b>ISFJ</b>	<b>INFJ</b>	<b>INTJ</b>	J U D G M E N T	I N T R O V P E R S I O N	E	76	40.21
<u>N</u> = 19	<u>N</u> = 56	<u>N</u> = 8	<u>N</u> = 4			I	113	59.79
% = 10.05	% = 29.63	% = 4.23	% = 2.12			S	141	74.60
*****	*****	****	■			N	48	25.40
						T	46	24.34
						F	143	75.66
						J	135	71.43
						P	54	28.57
						IJ	87	46.03
						IP	26	13.76
<b>ISTP</b>	<b>ISFP</b>	<b>INFP</b>	<b>INTP</b>	J U D G M E N T	I N T R O V P E R S I O N	EP	28	14.81
<u>N</u> = 6	<u>N</u> = 9	<u>N</u> = 9	<u>N</u> = 2			EJ	48	25.40
% = 3.17	% = 4.76	% = 4.76	% = 1.06			ST	37	19.58
■	■	■	■			SF	104	55.03
						NF	39	20.63
						NT	9	4.76
						SJ	109	57.67
						SP	32	16.93
						NP	22	11.64
						NJ	26	13.76
<b>ESTP</b>	<b>ESFP</b>	<b>ENFP</b>	<b>ENTP</b>	J U D G M E N T	I N T R O V P E R S I O N	TJ	35	18.52
<u>N</u> = 2	<u>N</u> = 15	<u>N</u> = 10	<u>N</u> = 1			TP	11	5.82
% = 1.06	% = 7.94	% = 5.29	% = 0.53			FP	43	22.75
■	■	■	■			FJ	100	52.91
						IN	23	12.17
						EN	25	13.23
						IS	90	47.62
						ES	51	26.98
						ET	15	7.94
						EF	61	32.28
<b>ESTJ</b>	<b>ESFJ</b>	<b>ENFJ</b>	<b>ENTJ</b>	J U D G M E N T	I N T R O V P E R S I O N	IF	82	43.39
<u>N</u> = 10	<u>N</u> = 24	<u>N</u> = 12	<u>N</u> = 2			IT	31	16.40
% = 5.29	% = 12.70	% = 6.35	% = 1.06					
■	■	■	■					

N = 189

S dom 92 48.68  
 N dom 23 12.17  
 T dom 20 10.58  
 F dom 54 28.57



Table 3

## Type Table Comparing Teachers in Study With Teacher Norms

SENSING		INTUITION		Type	N	%	I	Chi-Square	
THINKING	FEELING	FEELING	THINKING						
ISTJ	ISFJ	INFJ	INTJ	JUDGMENT	E	76	40.21	0.78*	12.8697
N=19	N=56	N=8	N=4		I	113	59.79	1.24*	12.8697
% = 10.05	% = 29.63	% = 4.23	% = 2.12		S	141	74.60	1.19*	15.2948
I = 0.94	I = 1.65*	I = 0.83	I = 1.00		N	48	25.40	0.68*	15.2948
0.1071	23.0804	0.3835	<u>1.0000</u>	PERCEPTION	T	46	24.34	0.76#	6.8116
					F	143	75.66	1.11#	6.8116
					J	135	71.43	1.03	0.5992
					P	54	28.57	0.93	0.5992
ISTP	ISFP	INFP	INTP	JUDGMENT	IJ	87	46.03	1.29*	11.2056
N=6	N=9	N=9	N=2		IP	26	13.76	1.10	0.3209
% = 3.17	% = 4.76	% = 4.76	% = 1.06		EP	28	14.81	0.81	1.9899
I = 1.82	I = 1.01	I = 1.03	I = 0.71		EJ	48	25.40	0.76#	7.0035
2.9667	0.0007	0.0144	<u>0.7418</u>	PERCEPTION	ST	37	19.58	0.90	0.6956
					SP	104	55.03	1.35*	20.7162
					NF	39	20.63	0.76*	5.2491
					NT	9	4.76	0.46#	8.2551
ESTP	ESFP	ENFP	ENTP	JUDGMENT	SJ	109	57.67	1.17*	6.5968
N=2	N=15	N=10	N=1		SP	32	16.93	1.30	3.2617
% = 1.06	% = 7.94	% = 5.29	% = 0.53		NP	22	11.64	0.65*	6.3824
I = 1.22	I = 1.39	I = 0.52*	I = 0.35		NJ	26	13.76	0.70*	5.4382
<u>1.0000</u>	2.2476	6.4985	<u>0.3127</u>	PERCEPTION	TJ	35	18.52	0.70#	8.0676
					TP	11	5.82	1.04	0.0233
					VP	43	22.75	0.90	0.8165
					FJ	100	52.91	1.24#	10.6089
ESTJ	ESFJ	ENFJ	ENTJ	PERCEPTION	IN	23	12.71	0.91	0.2779
N=10	N=24	N=12	N=2		EN	25	13.23	0.55*	16.0407
% = 5.29	% = 12.70	% = 6.35	% = 1.06		IS	90	47.62	1.36*	17.0740
I = 0.63	I = 1.02	I = 0.88	I = 0.20#		ES	51	26.98	0.98	0.0314
3.2002	0.0154	0.2760	<u>0.0044</u>	PERCEPTION	ET	15	7.94	0.49	12.0592
					EF	61	32.28	0.91	1.1719
					IF	82	43.39	1.34	13.7830
					IT	31	16.40	1.02	0.0234

Base Population used in calculating selection ratios: Elementary Teachers from the MBTI Manual (Myers & McCauley, 1985) N=804

Symbols following the selection ratios:

\* significance at .05 level

Chi-square >3.8

# significance at .01 level

Chi-square >6.6

\* significance at .001 level

Chi-square >10.8

— (underscore) indicates Fisher's exact probability used instead of Chi-square

I = Self-selection index: ratio of percent of type in norm group to percent in sample

% = percent of total in sample choosing this type

Dt S	92	48.68	1.38	19.6787
Dt N	23	12.17	0.64	7.3129
Dt T	20	10.58	0.63	7.0520
Dt F	54	28.57	0.99	0.0200
E-TJ	12	6.35	0.46	11.2485
E-FJ	36	19.05	0.97	0.0571
ES-P	17	8.99	1.36	2.3165
EN-P	11	5.82	0.50	8.2501
I-TP	8	4.23	1.31	0.7880
I-FP	18	9.52	1.02	0.0112
IS-J	75	39.68	1.39	14.8405
IN-J	12	6.35	0.88	0.2760

CRI manual ( $N = 491$ ) (Hammer & Marting, 1988). The means for cognitive, social support, spiritual/philosophical, and physical coping strategies in this sample were all more than two standard deviations above the norms. These results indicate that compared to the norming sample for the CRI, the sample in this study reported using more of all the coping strategies.

Table 4

## MBI Subscale Scores

Group	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Norm Group ( $N = 4,163$ )			
M	21.25	11.00	33.54
SD	11.01	6.19	6.89
Sample ( $N = 189$ )			
M	19.85	4.90	40.16
SD	10.60	4.51	6.06

Table 5

## Means for Coping Resources Inventory Subscales

Scale	Normative Group ( $N = 491$ )		Sample ( $N = 189$ )	
	M	SD	M	SD
Cognitive	27.45	4.64	53.64	9.27
Social Support	41.03	5.17	51.58	10.43
Emotional	47.46	7.21	53.06	10.79
Spiritual/ Philosophical	32.48	6.17	56.21	8.29
Physical	28.58	4.53	46.70	9.66

The sample mean for problem solving coping was 13.524,  $SD = 1.012$ . This is within one standard deviation of the mean reported for a norming population for the SAP based on 1,530 employees in several organizations (Nowack, 1990).

### Hypotheses

The main hypothesis of this study was that coping resources mediate the relationship between personality type and burnout. Path analysis was used to examine this hypothesis. As this study involves mediation, the following sets of regression equations were estimated: regressing coping resources on type, and regressing each of the dimensions of burnout on personality type, controlling for coping resources and teaching experience.

Correlation coefficients were calculated for the burnout scales, the coping resource scales and the type preference scales (see Table 6). Emotional Exhaustion showed a significant positive relationship with Depersonalization, and a significant negative relationship with social support, emotional coping, cognitive coping, spiritual/philosophical coping, and Personal Accomplishment. Depersonalization showed a significant positive relationship with Emotional Exhaustion, and a significant negative relationship with social support, emotional coping, cognitive coping, spiritual/philosophical coping, and Personal Accomplishment. Personal Accomplishment had a significant negative relationship with Emotional Exhaustion and Depersonalization

Table 6

Pearson Correlation Coefficients of the MBI Scales, the CRI Scales and the MBTI Scales

	EE	DP	PA	SS	EM	COG	PH	SP	PS	EI	SN	TF	JP
EE	1.00 0.000	0.52 0.000	-0.37 0.000	-0.21 0.003	-0.26 0.000	-0.38 0.000	-0.22 0.00	-0.28 0.000	-0.09 0.236	0.13 0.074	0.03 0.696	0.02 0.791	0.02 0.776
DP		1.00 0.000	-0.41 0.000	-0.22 0.002	-0.25 0.000	-0.28 0.000	-0.13 0.082	-0.27 0.000	-0.10 0.180	0.05 0.504	-0.03 0.662	-0.04 0.577	0.06 0.391
PA			1.00 0.000	0.33 0.000	0.40 0.000	0.39 0.000	0.20 0.005	0.38 0.000	0.13 0.069	-0.14 0.049	0.21 0.004	0.10 0.187	-0.09 0.219
SS				1.00 0.000	0.73 0.000	0.64 0.000	0.26 0.009	0.50 0.000	0.39 0.000	-0.45 0.000	0.23 0.001	0.15 0.042	0.09 0.248
EM					1.00 0.000	0.69 0.000	0.32 0.000	0.59 0.000	0.43 0.000	-0.28 0.000	0.15 0.037	0.12 0.091	-0.04 0.531
COG						1.00 0.000	0.42 0.000	0.54 0.000	0.34 0.000	-0.24 0.000	0.10 0.158	0.03 0.663	-0.04 0.582
PH							1.00 0.000	0.19 0.000	0.14 0.039	0.000 0.588	0.09 0.228	-0.02 0.736	0.01 0.912
SP								1.00 0.000	0.35 0.000	-0.06 0.375	0.09 0.300	0.16 0.029	-0.03 0.804
PS									1.00 0.000	-0.19 0.009	0.08 0.271	-0.04 0.954	0.01 0.872
EI										1.00 0.000	-0.14 0.052	-0.09 0.228	-0.15 0.039
SN											1.00 0.000	0.08 0.300	0.22 0.002
TF												1.00 0.000	0.06 0.424
JP													1.00 0.000

Note. EE = Emotional Exhaustion, DP = Depersonalization, PA = Personal Accomplishment, SS = social support, EM = emotional coping, COG = cognitive coping, PH = physical coping, SP = spiritual/philosophical coping, PS = problem solving coping, EI = extraversion/introversion, SN = sensing/intuition, TF = thinking/feeling, JP = judging/perceiving.

and a significant positive relationship with social support, emotional coping, cognitive coping, physical coping, and spiritual/philosophical coping. None of the burnout scales correlated significantly with problem solving coping.

Personal Accomplishment showed a significant negative correlation with the type preference scales of introversion and sensing. Extraversion also had a significant positive correlation with social support, emotional coping, cognitive coping, problem solving coping and sensing. Intuition showed a positive correlation with Personal Accomplishment, social support, and emotional coping. Feeling had a positive correlation with spiritual/philosophical coping and emotional coping. Judging showed a negative correlation with extraversion and perception showed a positive correlation with intuition. (Table 7 shows the abbreviations used in the tables for the variables in this study).

Table 7

Abbreviations for Variables Used in the Study

Type of Measure	Scale	Abbreviation
Burnout Scales	Emotional Exhaustion	EE
	Depersonalization	DP
	Personal Accomplishment	PA
Coping Resource Scales	Social Support	SS
	Emotional	EM
	Cognitive	COG
	Spiritual/Philosophical	SP
	Physical	PH
	Problem Solving	PS
Personality Type Scales	Extraversion/Introversion	EI
	Sensing/Intuition	SN
	Thinking/Feeling	TF
	Judging/Perceiving	JP

When coping strategies were regressed on type, extraversion and intuition were found to have a significant positive relationship to social support (see Table 8). Extraversion was also found to have a significant positive relationship to emotional, cognitive, and problem solving coping strategies (see Tables 9, 10, and 11). Feeling had a significant positive relationship to spiritual/philosophical coping (see Table 12). No significant relationships between type and physical coping were found (see Table 13). When Depersonalization was regressed on type, coping resources, and years of experience, none of the variables were found to have a significant relationship (see Table 14).

Table 8

## Regression Analysis for Personality Type Predicting Social Support

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	5261.33	1315.33	15.07	0.0001
Error	184	16055.91	87.26		
C Total	188	21317.24			
Root MSE		9.34	R-square		0.25
Dep Mean		50.73	Adj R-sq		0.23
C.V.		18.41			

## Parameter Estimates

Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	53.47	1.77	30.15	0.0001
EI	1	-9.21	1.41	-6.51	0.0001
SN	1	4.23	1.61	2.62	0.0095
TF	1	2.45	1.59	1.54	0.1261
JP	1	-0.56	1.56	-0.36	0.7191

Table 9

## Regression Analysis for Personality Type Predicting Emotional Coping

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	2416.35	604.09	5.75	0.0002
Error	184	19334.39	105.08		
C Total	188	21750.74			
Root MSE		10.25	R-square		0.11
Dep Mean		51.96	Adj R-sq		0.09
C.V.		19.73			

## Parameter Estimates

Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	53.60	1.95	27.54	0.0001
EI	1	-5.82	1.55	-3.75	0.0002
SN	1	3.29	1.77	1.86	0.0645
TF	1	2.42	1.75	1.38	0.1680
JP	1	-2.88	1.71	-1.69	0.0932

Table 10

## Regression Analysis for Personality Type Predicting Cognitive Coping

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	1202.27	300.57	3.60	0.008
Error	184	15366.54	83.51		
C Total	188	16568.80			
Root MSE		9.14	R-square		0.07
Dep Mean		52.24	Adj R-sq		0.05
C.V.		17.49			

## Parameter Estimates

Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	54.96	1.74	31.69	0.000
EI	1	-4.65	1.38	-3.36	0.001
SN	1	1.92	1.58	1.22	0.224
TF	1	0.20	1.56	0.13	0.896
JP	1	-2.02	1.52	-1.32	0.187

Table 11

## Regression Analysis for Personality Type Predicting Problem Solving Coping

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	7.71	1.93	1.92	0.1093
Error	184	184.91	1.00		
C Total	188	192.62			
Root MSE		1.01	R-square		0.04
Dep Mean		-0.86	Adj R-sq		0.02
C.V.		-116.57			

## Parameter Estimates

Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	-0.61	0.19	-3.19	0.002
EI	1	-0.38	0.15	-2.53	0.012
SN	1	0.14	0.17	0.83	0.405
TF	1	-0.06	0.17	-0.32	0.746
JP	1	-0.06	0.17	-0.48	0.701

Table 12

## Regression Analysis for Personality Type Predicting Spiritual/Philosophical Coping

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	507.31	126.83	1.74	0.144
Error	184	13442.50	73.06		
C Total	188	13949.81			
Root MSE		8.55	R-square		0.04
Dep Mean		55.41	Adj R-sq		0.02
C.V.		15.42			

## Parameter Estimates

Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	53.46	1.62	32.95	0.000
EI	1	-0.83	1.29	-0.63	0.524
SN	1	1.72	1.48	1.17	0.244
TF	1	3.04	1.46	2.08	0.039
JP	1	-1.02	1.42	-0.72	0.475



Table 13

## Regression Analysis for Personality Type Predicting Physical Coping

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	4	140.98	35.24	0.42	0.797
Error	184	15584.16	84.70		
C Total	188	15725.14			
Root MSE		9.20	R-square		0.01
Dep Mean		45.48	Adj R-sq		-0.01
C.V.		20.24			

## Parameter Estimates

Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	45.40	1.75	25.98	0.000
EI	1	0.20	1.39	0.14	0.888
SN	1	1.97	1.59	1.24	0.217
TF	1	-0.64	1.57	-0.41	0.684
JP	1	-0.19	1.53	-0.13	0.900

When Emotional Exhaustion was regressed on type, coping resources and years of experience, one variable, the interaction of thinking-feeling and problem solving, showed significance (see Table 15). When Emotional Exhaustion was regressed on thinking-feeling, problem solving, and the interaction between the two, the relationship was no longer significant (see Table 16).

When Personal Accomplishment was regressed on type, coping resources, and years of experience on Personal Accomplishment, several factors were related. Spiritual/philosophical coping, the interaction between extraversion-introversion and emotional coping, the interaction between thinking-feeling and social support, the

interaction between thinking-feeling and emotional coping, the interaction between cognitive coping and social support, and the interaction between social support and spiritual/philosophical coping were all significant (see Table 17).

Personal Accomplishment was then regressed on extraversion-introversion, thinking-feeling, emotional coping, social support, cognitive coping, spiritual/philosophical coping, the interaction between extraversion-introversion and emotional coping, the interaction between thinking-feeling and social support, the interaction between thinking-feeling and emotional coping, the interaction between cognitive coping and social support, and the interaction between social support and spiritual/philosophical coping. Spiritual/philosophical coping, emotional coping, the interaction between thinking-feeling and social support, the interaction between social support and cognitive coping strategies, and the interaction between social support and spiritual/philosophical coping resources were significantly related to Personal Accomplishment (see Table 18).

The results did not support the mediation model (see Figure 2) so the main hypothesis was rejected. Personal Accomplishment was the only burnout subscale to be significantly correlated with type or coping strategies.

Table 14

Regression Analysis for Personality Type, Coping Resources,  
and Years of Experience Predicting Depersonalization

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	55	1328.44	24.15	0.97	0.544
Error	133	3318.80	24.95		
C Total	188	4647.24			
Root MSE		5.00	R-square		0.29
Dep Mean		5.73	Adj R-sq		-0.01
C.V.		87.18			

Parameter Estimates					
Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	16.24	23.36	0.70	0.488
EI	1	4.68	10.12	0.46	0.644
SN	1	-3.27	11.26	-0.29	0.772
TF	1	13.07	8.69	1.50	0.135
JP	1	2.78	9.12	0.30	0.761
COG	1	-0.22	0.79	-0.28	0.780
SS	1	-0.57	0.67	-0.84	0.399
EM	1	1.32	0.81	1.62	0.107
SP	1	-0.79	0.53	-1.51	0.134
PH	1	-0.13	0.47	-0.27	0.787
PS	1	1.56	3.58	0.44	0.663
EISN	1	-4.33	2.56	-1.70	0.092
EITF	1	0.31	2.54	0.12	0.902
EIJP	1	1.98	2.47	0.80	0.424
EICOG	1	-0.18	0.18	-0.96	0.339
EISS	1	0.19	0.17	1.08	0.281
EIEM	1	-0.05	0.17	-0.30	0.763
EISP	1	0.04	0.16	0.23	0.821
EIPH	1	-0.07	0.12	-0.58	0.564
EIPS	1	0.67	1.34	0.50	0.620
SNTF	1	-2.64	2.88	-0.92	0.360
SNJP	1	0.41	2.20	0.18	0.853
SNCOG	1	-0.22	0.20	-1.10	0.274
SNSS	1	0.32	0.18	1.74	0.083
SNEM	1	-0.28	0.19	-1.45	0.149
SNSP	1	0.32	0.21	1.51	0.132
SNPH	1	-0.04	0.12	-0.37	0.700
SNPS	1	-1.67	1.28	-1.30	0.195
TFJP	1	-0.38	2.38	-0.16	0.875

Table 14 continued

Parameter Estimates					
Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
TFCOG	1	-0.16	0.19	-0.86	0.391
TFSS	1	0.24	0.21	1.16	0.246
TFEM	1	-0.08	0.21	-0.39	0.695
TFSP	1	-0.12	0.16	-0.74	0.459
TFPH	1	-0.10	0.14	-0.71	0.481
TFPS	1	1.35	1.17	1.15	0.251
JPCOG	1	0.06	0.17	0.34	0.731
JPSS	1	-0.07	0.18	-0.39	0.699
JPEM	1	0.20	0.19	1.05	0.294
JPSp	1	-0.16	0.20	-0.85	0.397
JPPH	1	-0.04	0.12	-0.34	0.733
JPPS	1	0.88	1.20	0.73	0.466
COGSS	1	0.00	0.01	0.06	0.949
COGEM	1	-0.01	0.01	-0.77	0.440
COGSP	1	0.01	0.01	0.65	0.517
COGPH	1	0.01	0.01	1.01	0.312
COGPS	1	-0.00	0.09	-0.01	0.992
SSEM	1	-0.00	0.01	-0.12	0.901
SSSP	1	0.00	0.01	0.57	0.572
SSPH	1	-0.00	0.01	-0.16	0.871
SSPS	1	0.04	0.09	0.45	0.655
EMSP	1	-0.01	0.01	-0.65	0.518
EMPH	1	-0.01	0.01	-1.16	0.250
EMPS	1	-0.04	0.10	-0.46	0.644
SPPH	1	0.01	0.01	1.06	0.290
SPPS	1	-0.09	0.08	-1.13	0.262
PHPS	1	0.05	0.06	0.88	0.383

Table 15

Regression Analysis for Personality Type, Coping Resources,  
and Years of Experience Predicting Emotional Exhaustion

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	55	6490.69	118.01	1.14	0.268
Error	133	13746.55	103.35		
C Total	188	20237.24			
Root MSE		10.17	R-square		0.32
Dep Mean		22.16	Adj R-sq		0.04
C.V.		45.88			

Table 15 continued

Parameter Estimates					
Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	71.50	47.56	1.50	0.135
EI	1	13.90	20.59	0.67	0.501
SN	1	5.66	22.92	0.25	0.805
TF	1	24.29	17.68	1.37	0.172
JP	1	1.80	18.56	0.10	0.923
COG	1	-0.98	1.60	-0.61	0.543
SS	1	0.50	1.36	0.37	0.712
EM	1	0.84	1.65	0.51	0.610
SP	1	-1.50	1.07	-1.40	0.164
PH	1	-0.66	0.96	-0.69	0.491
PS	1	5.03	7.29	0.69	0.492
EISN	1	-1.32	5.20	-0.25	0.799
EITF	1	-1.55	5.17	-0.30	0.764
EIJP	1	2.42	5.03	0.48	0.630
EICOG	1	-0.44	0.37	-1.19	0.238
EISS	1	0.19	0.35	0.54	0.591
EIEM	1	0.23	0.34	0.70	0.482
EISP	1	-0.20	0.33	-0.06	0.953
EIPH	1	-0.14	0.25	-0.56	0.578
EIPS	1	2.49	2.72	0.91	0.363
SNTF	1	4.27	5.86	0.73	0.467
SNJP	1	-5.12	4.47	-1.15	0.254
SNCOG	1	-0.10	0.41	-0.23	0.817
SNSS	1	0.14	0.37	0.38	0.701
SNEM	1	-0.44	0.39	-1.13	0.259
SNPH	1	0.16	0.24	0.66	0.510
SNPS	1	0.45	2.61	0.17	0.865
TFJP	1	3.30	4.84	0.68	0.497
TFCOG	1	-0.30	0.39	-0.76	0.446
TFSS	1	0.18	0.42	0.42	0.678
TFEM	1	-0.23	0.43	-0.54	0.588
TFSP	1	-0.12	0.33	-0.37	0.714
TFPH	1	0.12	0.29	0.41	0.678
TFPS	1	4.74	2.39	1.99	0.049
JPCOG	1	-0.58	0.35	-1.63	0.105
JPSS	1	-0.16	0.37	-0.43	0.664
JPEM	1	0.57	0.38	1.50	0.135
JPSP	1	0.11	0.40	0.28	0.776
JPPH	1	-0.06	0.25	-0.22	0.829
JPPS	1	-1.11	2.44	-0.46	0.650

Table 15 continued

Parameter Estimates					
Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
COGSS	1	0.00	0.02	0.11	0.914
COGEM	1	-0.00	0.02	-0.21	0.836
COGSP	1	0.02	0.02	0.70	0.487
COGPH	1	0.01	0.01	0.80	0.422
COGPS	1	-0.05	0.19	-0.28	0.779
SSEM	1	-0.01	0.02	-0.69	0.494
SSSP	1	0.00	0.02	0.20	0.838
SSPH	1	-0.00	0.02	-0.36	0.723
SSPS	1	0.17	0.19	0.92	0.360
EMSP	1	-0.00	0.02	-0.01	0.991
EMPH	1	-0.00	0.02	-0.03	0.979
EMPS	1	-0.03	0.20	-0.16	0.873
SPPH	1	0.00	0.02	0.19	0.848
SPPS	1	-0.26	0.17	-1.54	0.127
PHPS	1	0.01	0.12	0.11	0.910

Table 16

Regression Analysis for the Interaction Between Thinking-Feeling and Problem Solving Predicting Emotional Exhaustion

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	3	332.20	110.73	1.03	0.380
Error	185	19905.04	107.59		
C Total	188	20237.24			
Root MSE		10.37	E-square		0.01
Dep Mean		22.16	Adj R-sq		0.00
C.V.		46.81			

Parameter Estimates					
Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	19.99	1.86	10.76	0.00
TF	1	2.14	2.20	0.97	0.33
PS	1	-2.13	1.23	-1.73	0.09
TFPS	1	1.97	1.55	1.27	0.21

Table 17

Regression Analysis for Personality Type, Coping Resources, and Years of Experience Predicting Personal Accomplishment

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	55	2988.18	54.33	2.44	0.000
Error	133	2957.00	22.23		
C Total	188	5945.18			
Root MSE		4.72	R-square		0.50
Dep Mean		39.52	Adj R-sq		0.30
C.V.		11.93			

## Parameter Estimates

Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	39.87	22.06	1.81	0.073
EI	1	-9.31	9.55	-0.98	0.331
SN	1	13.27	10.63	1.25	0.214
TF	1	-14.41	8.20	-1.76	0.081
JP	1	-1.73	8.61	-0.20	0.841
COG	1	-0.67	0.74	-0.91	0.366
SS	1	-0.50	0.63	-0.79	0.433
EM	1	0.10	0.76	0.12	0.901
SP	1	1.45	0.50	2.91	0.004
PH	1	-0.70	0.44	-1.58	0.116
PS	1	-2.97	3.38	-0.88	0.382
EISN	1	2.14	2.41	0.89	0.376
EITF	1	1.74	2.40	0.73	0.469
EIJP	1	1.85	2.33	0.80	0.430
EICOG	1	0.30	0.17	1.76	0.081
EISS	1	0.16	0.16	1.00	0.320
EIEM	1	-0.35	0.16	-2.23	0.028
EISP	1	-0.11	0.15	-0.74	0.458
EIPH	1	0.15	0.11	1.31	0.193
EIPS	1	0.95	1.26	0.75	0.454
SNTF	1	0.96	2.72	0.35	0.724
SNJP	1	0.06	2.07	0.03	0.975
SNCOG	1	-0.33	0.19	-1.75	0.083
SNSS	1	-0.05	0.17	-0.28	0.781
SNEM	1	0.11	0.18	0.62	0.536
SNSP	1	0.15	0.20	0.74	0.458
SNPH	1	-0.13	0.11	-1.19	0.237
SNPS	1	0.70	1.21	0.57	0.570
TFJP	1	3.17	2.25	1.41	0.160

Table 17 continued

Parameter Estimates					
Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
TFCOG	1	0.24	0.18	1.33	0.186
TFSS	1	0.43	0.20	2.18	0.031
TFEM	1	-0.51	0.20	-2.59	0.011
TFSP	1	0.03	0.16	0.22	0.828
TFPH	1	0.09	0.13	0.71	0.481
TFPS	1	1.03	1.11	0.93	0.356
JPCOG	1	0.15	0.16	0.90	0.369
JPSS	1	-0.00	0.17	-0.03	0.973
JPEM	1	0.03	0.18	0.16	0.869
JPSP	1	-0.18	0.18	-0.99	0.326
JPPH	1	-0.06	0.12	-0.48	0.632
JPPS	1	0.27	1.13	0.24	0.812
COGSS	1	0.02	0.01	2.43	0.016
COGEM	1	-0.01	0.01	-1.34	0.182
COGSP	1	-0.01	0.01	-0.86	0.394
COGPH	1	0.01	0.01	1.16	0.248
COGPS	1	-0.01	0.09	-0.15	0.883
SSEM	1	0.00	0.01	0.22	0.822
SSSP	1	-0.02	0.01	-2.42	0.017
SSPH	1	-0.00	0.01	-0.52	0.608
SSPS	1	-0.01	0.09	-0.16	0.870
EMSP	1	0.01	0.01	1.07	0.286
EMPH	1	0.01	0.01	1.77	0.079
EMPS	1	0.07	0.09	0.77	0.444
SPPH	1	-0.01	0.01	-0.79	0.431
SPPS	1	-0.01	0.08	-0.17	0.865
PHPS	1	-0.01	0.06	-0.31	0.757



Table 18

Regression Analysis for Previously Significant Variables  
Predicting Personal Accomplishment

Source	df	Sum of Squares	Mean Square	F Value	Prob>F
Model	11	1566.08	142.37	5.76	0.0001
Error	177	4379.10	24.74		
C Total	188	5945.18			
Root MSE		4.97	R-square		0.26
Dep Mean		39.52	Adj R-sq		0.22
C.V.		12.59			

## Parameter Estimates

Variable	df	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >  T
INTERCEP	1	21.61	13.37	1.62	0.1077
EI	1	3.55	4.56	0.78	0.4375
TF	1	-3.99	4.45	-0.90	0.3703
EM	1	0.36	0.15	2.40	0.0174
SP	1	0.63	0.24	2.64	0.0091
SS	1	-0.27	0.30	-0.91	0.3664
COG	1	-0.40	0.23	-1.74	0.0841
EIEM	1	-0.08	0.08	-0.90	0.3680
TFSS	1	0.30	0.14	2.047	0.0421
TFEM	1	-0.20	0.14	-1.36	0.1755
COGSS	1	0.01	0.00	2.29	0.0231
SSSP	1	-0.01	0.00	-2.16	0.0320

There were insufficient significant findings to support the hypothesis that coping strategies are a mediating factor between type and burnout.

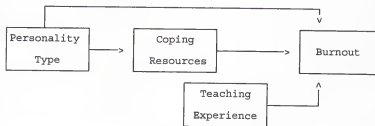


Figure 2. A Path Diagram

The following specific hypotheses were tested.

Hypothesis 1.

Extraversion is positively related to social, emotional, and cognitive resources.

This hypothesis was accepted. Extraversion showed a significant positive relationship to social ( $p < .0001$ ,  $T = -6.51$ ), emotional ( $p < .001$ ,  $T = -3.75$ ), and cognitive ( $p < .001$ ,  $T = -3.36$ ) coping strategies.

Hypothesis 2.

A preference for feeling is positively related to social and emotional resources.

This hypothesis was rejected.

Hypothesis 3.

A preference for feeling is positively related to cognitive resources.

This hypothesis was rejected.

#### Hypothesis 4

A preference for thinking is positively related to problem-focused resources.

This hypothesis was rejected.

#### Hypothesis 5.

The relationship between extraversion and Emotional Exhaustion is mediated by social, emotional, and cognitive resources.

This hypothesis was rejected.

#### Hypothesis 6

The relationship between Depersonalization and judging is mediated by social support.

This hypothesis was rejected.

#### Hypothesis 7.

The relationship between feeling and Depersonalization is mediated by social, emotional, and cognitive resources.

This hypothesis was rejected.

### Exploratory Analyses

I conducted exploratory cluster analyses using SPSS to search for possible groupings of coping resources employed by the teachers. The analysis was first run using the six coping resources. No meaningful clusters were found.

Hammer and Marting (1988) found that intercorrelations of the CRI scales revealed some overlap between the cognitive, social, and emotional scales. On the basis of

this finding, I grouped these three scales together and called the new variable Factor 1.

Cluster analysis was then run using Factor 1, physical coping, problem solving coping, and spiritual/philosophical coping as variables. The first cluster analysis found several clusters with only one or two members. Ward's Method was then used to force more equal groupings. Groupings of two to eight clusters were studied. I decided that six clusters was the most meaningful grouping (see Figure 3) as it revealed six distinct patterns of coping resource usage. The divisions into four and five clusters appeared to miss some of the patterns revealed in the six cluster grouping. The clusters identified in the seven and eight cluster groups did not appear to add much in terms of distinct differences. Each of the six clusters could be identified by the pattern of coping resources used as shown in Table 19.

Table 19

Coping Clusters, Coping Patterns, and Type

Type	Cluster	Coping Pattern
I	1	low on all coping resources
I, J	2	low on all except physical coping
E, N	3	high on all coping resources
T	4	fairly low on all, very low on spiritual/philosophical
T	5	problem solving high, physical low
E, F	6	spiritual/philosophical and Factor 1 high physical and problem solving average



Table 22

## Crosstabs of Coping Clusters and Thinking/Feeling

		Ward Method						
		1	2	3	4	5	6	Total
T	Count	4	8	8	13	7	6	46
	%	15.4%	22.2%	24.2%	32.5%	46.7%	15.4%	24.3%
	Std. Residual	-.9	-.3	0.0	1.0	1.8	-1.1	
F	Count	22	28	25	27	8	33	143
	%	84.6%	77.8%	75.8%	67.5%	53.5%	84.6%	75.7%
	Std. Residual	.5	.1	.0	-.6	-1.0	.6	
Total								
	Count	26	36	33	40	15	39	189
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 23

## Crosstabs of Coping Clusters and Judging/Perceiving

		Ward Method						
		1	2	3	4	5	6	Total
J	Count	19	29	22	27	9	29	135
	%	73.1%	80.6%	66.7%	67.5%	60.0%	74.4%	71.4%
	Std. Residual	.1	.6	-.3	-.3	-.5	.1	
P	Count	7	7	11	13	6	10	54
	%	26.9%	19.4%	33.3%	32.5%	40.0%	25.6%	28.6%
	Std. Residual	-.2	-1.0	.5	.5	.8	-.3	
Total	Count	26	36	33	40	15	39	189
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Cluster analysis was used to examine the MBI scores on the three subscales. The scores were converted to Z scores. For purposes of clarity, Personal Accomplishment scores were reversed so that a low score indicated low burnout. Groupings in four clusters appeared to be most meaningful (see Figure 4). These clusters were Group 1, average on all three scales; Group 2, low on all three scales; Group 3, above average in burnout on Emotional Exhaustion; and Group 4, above average on Depersonalization.

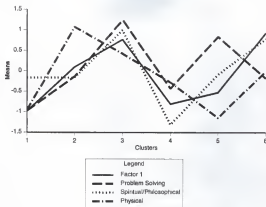


Figure 3. Coping Clusters

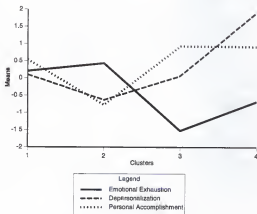


Figure 4. Burnout Clusters

The relationships between the type preference scales and the burnout clusters were examined using crosstabulation. The only significant finding was a relationship between perception and Cluster 3, above average on Emotional Exhaustion (see Table 24).

Table 24

Crosstabs of Burnout Clusters and Judging/Perceiving

		Ward Method				
		1	2	3	4	Total
J	Count	38	68	11	18	135
	%	77.6%	73.9%	52.4%	66.7%	71.4%
	Std. Residual	.5	.3	-1.0	-.3	
P	Count	11	24	10	9	54
	%	22.4%	26.1%	47.6%	33.3%	100.0%
	Std. Residual	-.8	-.4	1.6	.5	
Total	Count	49	92	21	27	189
	%	100.0%	100.0%	100.0%	100.0%	100.0%

The relationships between the coping clusters and the burnout clusters were appraised using crosstabulation (see Table 25). As summarized in Table 26, relationships were found with five of the six coping clusters.

Years of experience was not found to be a significant variable in the multiple regression equations. An ANOVA was run to test for a correlation between years of experience and either the coping clusters or the burnout clusters. No significant relationship was found.

#### Summary of Findings

The sample in this study comprised 189 teachers from 14 elementary schools. When compared with a larger sample of



Table 25

## Crosstabs of Coping Clusters and Burnout Clusters

	Ward Method				Total
	1	2	3	4	
1 Count	9	8	4	5	26
%	18.4%	8.7%	19.0%	18.5%	13.8%
Std. Residual	.9	-1.3	.7	.7	
2 Count	10	18	3	5	36
%	20.4%	19.6%	14.3%	18.5%	19.0%
Std. Residual	.2	.1	-.5	-.1	
3 Count	5	23	2	3	33
%	10.2%	25.0%	9.5%	11.1%	17.5%
Std. Residual	-1.2	1.7	-.9	-.8	
4 Count	9	14	8	9	40
%	18.4%	15.2%	38.1%	33.3%	21.2%
Std. Residual	-.4	-1.2	1.7	1.4	
5 Count	4	5	2	4	15
%	8.2%	5.4%	9.5%	14.8%	7.9%
Std. Residual	.1	-.9	.3	1.3	
6 Count	12	24	2	1	39
%	24.5%	26.1%	9.5%	3.7%	20.6%
Std. Residual	.6	1.2	-1.1	-1.9	
Total Count	49	92	21	27	189
%	100%	100%	100%	100%	100%

teachers, the sample in this study was significantly more introverted, sensing, and feeling. The teachers in this study reported an average amount of burnout for teachers. The results indicate that compared to the norming sample for the CRI, the sample in this study reported using more of all the coping strategies.

Significant correlations were found between the three burnout scales and five of the coping resource scales. Problem solving coping was the only coping resource that did not correlate with any of the burnout scales.

The results did not support the mediation model so the main hypothesis was rejected. In the analysis for the model, personal accomplishment was the only burnout subscale to be significantly correlated with type or coping strategies. There were not sufficient findings regarding coping strategies as a mediating factor between type and burnout.

Table 26

## Summary of Coping Clusters and Burnout Clusters

Coping Cluster	Overrepresented Burnout Clusters	Underrepresented Burnout Clusters
1	none	Group 2 (low burnout)
2	none	none
3	Group 2 (low burnout)	Group 1 (average burnout) trend toward Groups 3 and 4
4	Groups 3 and 4 (burned out on Emotional Exhaustion or Depersonalization)	Group 2 (low burnout)
5	Group 4 (burned out on Depersonalization)	trend toward Group 2 (low burnout)
6	Group 2 (low burnout)	Groups 3 and 4 ((burned out on Emotional Exhaustion or Depersonalization)

I grouped together the cognitive, emotional and social scales and called the new variable Factor 1. Cluster analysis, using Factor 1 and the other coping scales, revealed six distinct patterns of coping resource usage. Five of the coping clusters correlated significantly with type preferences.

For the burnout scales, groupings in four clusters appeared to be most meaningful. Type was not a significant

predictor of the burnout clusters. Using crosstabulation, correlations were found between the burnout clusters and five of the six coping clusters.

## CHAPTER 5 DISCUSSION AND RECOMMENDATIONS

### Overview

Teaching is considered by many to be a stressful occupation (Blase, 1986; Dewe, 1986; Hawkes & Dedrick, 1981; Hock, 1988; O'Conner & Clarke, 1990; Wyly & Frusher, 1990). High levels of stress without adequate coping resources can lead to burnout (Dunham, 1980, 1984). "Burnout is a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who do 'people' work of some kind" (Maslach & Jackson, 1986, p. 1). Researchers have found that burnout is a problem among teachers in the United States and in many other countries (Berg, 1994; Borg, 1990; Borg & Riding, 1991; Chan & Hui, 1995; Fergusson, 1984; Friedman & Farber, 1982; Hanchey & Brown, 1989; Huberman, 1993; Kim, Navarro, & Medina, 1984; Laughlin, 1984; McGrath, Houghton, & Reid, 1989; Mykletun, 1984; Sarros & Sarros, 1990). Burnout causes both personal problems for the individual and decreased effectiveness at work (Austin, 1981; Berg, 1994; Byrne, 1994; Chan & Hui, 1995; Cherniss, 1980; Cunningham, 1982; Farber, 1984; Fimian, Zacherman, & McHardy, 1985; Harris, Halpin, & Halpin, 1985; Maslach & Jackson, 1981b; Paine, 1981; Sarros & Sarros, 1992; Schwab, Jackson, & Randall, 1986; Shinn,

1982; Wangberg, 1981).

Use of appropriate coping strategies has been found to ameliorate or postpone burnout (Dunham, 1980, 1984; Endler & Parker, 1989, as cited in Endler & Parker, 1990; McCrae & Costa, 1986). Use of inappropriate coping strategies can actually contribute to burnout (Hanchey & Brown, 1989; Kobasa, 1982; Nowack, 1989; Pierce & Molloy, 1990).

The causes of burnout can be categorized into three groups: organizational, interpersonal, and personal. Byrne (1994) and Lazarus (1990) both stated that personality influences the way that people respond to and cope with stressors. One of the individual or personal variables that has been found to correlate with the amount and pattern of burnout is personality type as measured by the MBTI (Davis-Johnson, 1991; Garden 1985, 1988; Grimm, 1986; Hughes, McNellis, & Hoggard, 1987; Layman, 1998; Lemkau, Purdy, Rafferty, & Rudisill, 1988; Nattkemper, 1986; Rinke, 1989).

Personality type has also been found to correlate with the type of coping strategies used. Although personality type has been found to be related to coping and to burnout, and coping strategies were found to be related to burnout, no one had previously looked at the relationships among the three variables. The purpose of this study was to examine whether coping mediates the relationship between type and burnout.

Theorists disagree as to whether coping is process-oriented or trait-oriented. The process-oriented view states that coping is a situation-specific process. The trait-oriented view conceives of coping as a personal predisposition to respond to stress in a characteristic way. Part of the question examined in this study concerned the concept of coping as trait-oriented as opposed to process-oriented. If coping was found to be a mediator between type and burnout then it would provide additional support for trait theory.

It has been suggested that stress management programs would be more helpful if they were individualized (Jenkins & Calhoun, 1991). Findings that link type and appropriate coping strategies could assist in the design of such programs.

I administered the Myers-Briggs Type Indicator (MBTI), the Coping Resources Inventory (CRI), the problem solving subscale from the Stress Assessment Profile (SAP), and the Maslach Burnout Inventory (MBI) to 189 elementary teachers from 14 public schools in north central Florida.

Path analysis was used to examine the hypothesis that coping mediates the relationship between type and burnout. The following sets of regression equations were estimated: regressing personality type preferences on each of the coping resources and regressing each of the dimensions of burnout on personality type, coping resources, and teaching

experience. Exploratory cluster analysis was also conducted on the results of the coping resources scales and the burnout scales.

#### Limitations of the Study

The instruments used in this study are all self-report measures, and so the "social desirability" of certain answers might have influenced the results. When I examined the burnout subscales, I found that the questions related to depersonalization were worded in a manner that might make it socially or psychologically difficult for teachers of young children to answer that they are burned out in this manner (e.g., "I feel I treat some students as impersonal objects." Maslach & Jackson, 1986). These questions also could be difficult for teachers with a feeling preference to agree with, because these teachers are more concerned about the emotions of other people and their relationships with them than teachers with a preference for thinking.

The norm sample of teachers in the Maslach Burnout Inventory included teachers at all levels of public schooling. Research indicates differences in the level of burnout between secondary school and elementary school teachers (Borthwick, Thornell, & Wilkinson, 1982; Connolly & Sanders, 1986; Shearin, 1996). This makes it difficult to compare the burnout means of the teachers in this study with the burnout means of the norm group.

Although all the teachers in the schools included in this study were encouraged to participate, no one was required to do so. There are several reasons why the teachers who did participate may have been a biased group, either by type, coping resources, or burnout levels. People with certain personality types tend to be more interested in information from the MBTI. Also, certain personality types tend to be more likely to do whatever they are asked to do (Myers, 1980; Myers & McCaulley, 1985; Myers, McCaulley, Quenk, & Hammer, 1998). Teachers who are burned out might be less likely to want to exert the extra energy to participate. This could influence both burnout scores and coping scores.

The individual principals agreed to allow their schools to participate in this study. This may have resulted in a biased sample of schools and, therefore, of teachers.

This study did not include a measure of stress. It is possible that most of these teachers did not feel that they were experiencing the amount of stress necessary to cause higher levels of burnout.

### Discussion

#### Type Distribution

The type distribution of this sample is significantly different from what would be expected based on other samples of elementary teachers. The teachers in this study more often preferred introversion, sensing, and feeling than the



norming population of elementary teachers in the MBTI Manual (Myers & McCaulley, 1985). These preferences suggest a sample of teachers who are fairly traditional, are somewhat resistant to change, are interested in people, enjoy repeating learned skills, and receive energy from their internal resources (Myers, 1980; Myers & McCaulley, 1985; Myers et al., 1998). This group seemed to be well suited to what appeared to be a traditional elementary school environment. They were experiencing some stress, however, because they reported an average amount of burnout on two of the subscales, emotional exhaustion and personal accomplishment.

#### Burnout

On the Depersonalization subscale, the sample mean was one standard deviation below the mean for the norming group, suggesting less burnout. When I examined the questions on this subscale, the results I obtained appeared to be reasonable. The questions ask whether teachers feel that they have become more callous since they started teaching and believe that they treat some students as if they were impersonal objects. A majority of this sample reported a preference for feeling, indicating a concern with other people, with harmony, and with strong personal values (Martin, 1995; Myers, 1980; Myers & McCaulley, 1985; Myers et al., 1998). All of these concerns could make it more

difficult for these teachers to admit that they are more callous and treat some students impersonally.

This is also likely to be a response that would not be considered socially desirable among teachers who work with young children. Elementary schools are usually structured so that they are less impersonal than middle and high schools and so teachers may believe that it is important that they have a caring relationship with their students. The norming population, on the other hand, included teachers at all levels.

The only burnout subscale in this study that correlated with personality type was Personal Accomplishment. Other researchers have found correlations between type and Personal Accomplishment, (Hughes et al., 1987; Lemkau et al., 1988; Nattkemper, 1986; Rinke, 1989) Emotional Exhaustion (Hughes et al., 1987; Lemkau et al., 1988; Rinke, 1989) and Depersonalization (Hughes et al., 1987; Lemkau et al., 1988; Rinke, 1989). The most frequent correlation has been that those persons with a preference for extraversion, when compared with persons with a preference for introversion, tend to report less burnout. I did not find any correlations between the extraversion-introversion preference and burnout.

#### Coping Resources

The teachers in this study reported unusually high usage of coping resources. The sample means for cognitive,

social support, spiritual/philosophical, and physical coping strategies were all more than two standard deviations above the norms. The sample mean for emotional coping was more than one standard deviation above the norm. The norming sample for the coping resources from the CRI is relatively small and is identified only as being female (Hammer & Marting, 1988). Occupation, educational level, and age are not specified. It may be that elementary teachers do tend to use a larger number of coping resources than do females in the general population, or at least that they use more of the coping resources measured by the CRI.

The sample mean for problem solving was within one standard deviation of the mean for the norming population for that instrument. The norming population for the SAP (the problem solving scale) is from manufacturing, aerospace, communications, and health care organizations (Nowack, 1990) and may not be applicable to the current study.

The teachers in this study are making above average use of many coping strategies. When integrated with the burnout data, which shows that the teachers report an average amount of burnout, this suggests that the coping resources are helping.

The data did provide support for the hypothesis that there are relationships between psychological type and teachers' coping resources. I found several significant correlations between type and coping resources. Extraversion

and intuition were found to have a significant positive relationship to the use of social support. Extraversion was also found to have a significant positive relationship to emotional, cognitive, and problem solving coping strategies. Feeling had a significant positive relationship to spiritual/philosophical coping.

In a recent study Hammer (Myers, et al., 1998) also found a significant positive correlation between extraversion and social coping using the MBTI Form M and the CRI. In addition, he obtained significant positive correlations between extraversion, cognitive, emotional, and spiritual/philosophical coping and correlations between social support and sensing and feeling.

#### Theoretical Implications

The data from this study do not support the proposed mediation model. When coping strategies were regressed on type, some significant correlations were found. However in the final regression equations, Personal Accomplishment was the only burnout subscale that showed significant correlations with type, coping resources, or their interactions. Spiritual/philosophical coping, emotional coping, the interaction between thinking/feeling and social support, the interaction between social support and spiritual/philosophical coping, and the interaction between social support and cognitive coping resources were the only

variables to show significant correlations with Personal Accomplishment.

This study does lend some support to the trait theory of coping. The trait-oriented view conceives of coping as an innate personal predisposition to respond to stress in a characteristic way (Hammer & Marting, 1988). This view contrasts with the process-oriented view that asserts coping is a situation-specific process (Lazarus & Folkman, 1984). I found correlations between type and coping and also between type and the coping clusters. This suggests that use of coping resources is influenced by personality as Byrne (1994) and Lazarus (1990) both stated. As personality type preferences are considered to be inherent and do not change from one situation to another, the correlation between type and coping supports the trait-oriented view.

### Clusters

Cluster analysis was performed on the Maslach Burnout Inventory subscale scores to find out whether groups of teachers could be found who shared similar patterns of burnout. The Coping Resource Inventory scores were also analyzed to determine if the teachers could be categorized into groups based on similar patterns in the use of coping resources. On the basis of a factor analytic study by Hammer and Marting (1988), for the cluster analysis emotional, cognitive, and social support coping scores were combined into one variable which was called Factor 1.

Groupings of two to eight clusters were examined. I decided that six clusters for coping resources and four clusters for burnout scores were the most meaningful.

Some of the coping patterns could be predicted from type theory. The fifth cluster correlates with a thinking preference. Individuals with a thinking preference are defined as being interested in finding what is wrong and fixing it (Myers, 1980; Myers & McCaulley, 1985). This is consistent with this cluster's high scores on problem solving.

Spiritual/philosophical coping correlated with feeling, and the questions appear to be worded to appeal to individuals with a preference for feeling. Also, in a national sample ( $N = 3,036$ ), researchers found that the four top-ranked types reporting that they believed in a higher spiritual power were all individuals with a preference for feeling. (Myers et al., 1998). Therefore, the fifth cluster, which correlates with a thinking preference, would be expected to score low on use of spiritual/philosophical coping.

However, on the basis of the correlations between the fifth coping cluster and the fourth burnout cluster, the problem solving coping strategy can lead to burnout due to Depersonalization. Although social support, emotional coping, and cognitive coping all involve interaction with others, problem solving does not necessarily require

interaction with others. Using this type of coping, problem solving, does not bring one closer to others, but it may bring a feeling of accomplishment and may ease emotional exhaustion, if not the feeling of being separated from others.

The fourth cluster also showed a significant relationship with the thinking preference and therefore, a predictably low score on spiritual/philosophical coping. This cluster showed a pattern of low coping on all resources, with spiritual/philosophical measuring the lowest. As would be predicted because of the low use of coping, the people who exhibited this pattern of coping tended to report being burned out, either on Depersonalization or Emotional Exhaustion.

The third cluster scored above average on all coping resources. Given the correlations between type and coping, it is not surprising that this cluster correlates with extraversion and intuition. As would be expected of a group of people who are using all coping resources, the persons in this cluster tended to exhibit low burnout.

The sixth cluster, the only other group to score above average on more than one coping resource, showed above average scores on Factor 1 and spiritual/philosophical coping and average on physical and problem solving coping. This cluster of coping resources correlated with extraversion and feeling preferences. The correlations

between extraversion and Factor 1 and between feeling and spiritual/philosophical coping are predictable based on previous correlations. This pattern of coping correlated with low burnout, suggesting that it is not necessary to be above average on all of the coping resources to be resistant to burnout.

### Practical Implications

There do appear to be correlations between personality type and burnout. Certain types show particular patterns of coping resource usage and burnout. When planning stress management workshops, trainers need to realize that the pattern of the coping resources may be more important than use of a specific resource. The cluster analysis does suggest resources that might help. However, research should be done to determine whether these clusters can be found in other groups (Lorr, 1983). More research is needed in determining the patterns of coping resources used successfully by each type.

The correlations between the coping clusters and the burnout clusters suggest that in some cases a particular coping resource may affect burnout, whereas in other cases it may be the patterns of resources used. When comparing cluster 1 and cluster 2, the use of one coping resource, physical coping, is related to burnout. In other cases (cluster 6) physical coping is slightly below average but the use of other resources seems to be related to burnout.



Although some researchers have found that problem solving is one of the most successful coping strategies, based on the data in this study, problem solving alone does not appear to be sufficient to prevent burnout (cluster 5).

In this study and in previous research, extraverts report using more coping resources, and feeling types report using more spiritual/philosophical coping. Therefore, introverted types, and particularly introverted thinking types, would appear to be at higher risk for burnout. This could be a special concern since these types are less likely to seek help from other people.

#### Directions for Future Research

The results of this study suggest several different avenues of further research, one of which concerns type distribution. This sample of teachers was significantly different in terms of type distribution from the norming sample of teachers. The norming sample of teachers is from 1978-1982. Whether the sample in this study is an unusual sample or whether the type distribution of elementary teachers is changing is a question that deserves examination.

This sample showed different correlations between burnout and type than had been found by researchers in previous studies. Few of the prior studies were of teachers, especially not with elementary teachers, and so it is

difficult to tell whether this unusual result was because this sample consisted of elementary teachers.

The teachers in this study reported an unusually high usage of coping resources. It would be helpful to have samples from several occupations to compare with these results.

The literature on coping mentions many different coping strategies. A correlation has been found between extraversion and several of the coping resources measured by the CRI, both in this study and in other studies. It is not clear whether individuals who prefer introversion use coping resources as much as those who prefer extraversion, or whether there are coping resources used either successfully or unsuccessfully, by those with a preference for introversion that are not measured by the CRI. Researchers should ask people with a preference for introversion what coping strategies they use.

Although I did not find a correlation between the extraversion-introversion scale and burnout, other researchers have done so. Of the five researchers who had previously examined the extraversion-introversion preference scale or looked at the 16 types, four found significant correlations (Davis-Johnson, 1991; Grimm, 1986; Hughes et al., 1987; Lemkau et al., 1988), and Rinke (1989) found nonsignificant trends. In each of these cases, those with a preference for introversion reported more burnout than did

persons with a preference for extraversion. More recently, Layman (1998) using the Maslach Burnout Scale, the MBTI, and the Coping Resource Inventory Scale (CRIS) in a study of directors of hospital health information management departments found significant positive relationships between introversion and both Emotional Exhaustion and Depersonalization, and a significant negative relationship with Personal Accomplishment, all of which indicate more burnout. It may be that those with a preference for introversion actually do experience burnout more often. It could also be that individuals with a preference for extraversion experience burnout differently and the current burnout instruments do not measure their feelings of burnout. Also, according to type theory, those with a preference for introversion direct their energy inward and reflect on life more than others. This could mean that they are more aware of burnout when it occurs.

The 16 types are likely to find different experiences to be stressful. Identifying the major stressors for each type could help in designing ways to relieve or minimize these stresses.

Along with the stressors, the rewards of teaching that make it worthwhile, that balance out the stresses, also need to be identified. These rewards probably differ depending on the personality type of the teacher. Research to find ways to maximize the rewards might help to prevent burnout.

The data from this study do not provide clear guidelines for designing stress management programs based on personality type. However, the data do provide support for the hypothesis that type and coping are related. On the basis of this finding, additional research should be conducted to examine clusters of coping resources and their correlations with burnout and with type.

#### Summary

There does appear to be a relationship between coping and personality type. The relationship is not simple and requires further research. However, the results from this study and from previous research suggest that type theory could be a help in designing stress management workshops for teachers.

APPENDIX  
INFORMATION AND INFORMED CONSENT

Principal Investigator: Jean Barbara Reid  
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The purpose of this study is to examine the relationships among personality type, coping processes, and burnout in elementary teachers. It is hoped that information from this study can be used to assist teachers in coping with stress and preventing burnout.

You will be asked to spend approximately one and one-half hours completing several self-inventories. These are the Myers-Briggs Type Indicator-Form F, the Maslach Burnout Inventory, the Coping Resources Inventory and one subscale of the Stress Assessment Profile. Only I will have access to your scores on the instruments, and I will keep the results confidential to the extent provided by the law. Results will not be given to school personnel. I will provide individual feedback to you regarding your results on each instrument.

This study will not involve any risks of harm greater than those ordinarily encountered in daily life or during the performance of a psychological test. There are no immediate benefits expected from participating in the taking of the instruments other than what is gained through the individual feedback regarding results on the instruments. You will not receive any monetary compensation for your participation, but you will be offered the opportunity to participate in a workshop that will include information regarding personality types and their learning and interacting styles, and activities that should help you to gain a better understanding of your own personality type and how it affects your work and life.

You will be free at any time to withdraw your consent and to discontinue participation in the project or activity at any time without prejudice. You do not have to answer any question you do not wish to answer.

If you have any questions concerning the procedures, please feel free to contact me at the address and phone number at the top of this form. Any questions or concerns about your rights as a research participant can be directed to the UFIRB office, Box 112250, University of Florida, Gainesville, FL 32611-2250.

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Principal Investigator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

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## BIOGRAPHICAL SKETCH

Jean Barbara Reid (INFP) was born and grew up in Gainesville, Florida. Her preference for intuition and perception showed even as a child in her interests in many different areas. She was involved in dancing and acrobatics, music, reading, working with children, church, Girl Scouts, etc.

She continued many of these interests throughout her undergraduate years at the University of Florida, dancing with a local ballet company, teaching acrobatic dancing, and competing on the UF gymnastics team. She received her bachelor's degree in early childhood education.

Jean taught kindergarten in a public elementary school for two years before taking a teaching position with Holy Trinity Child Caring Center in Gainesville, Florida. Finding the job to be very rewarding, she continued teaching there for many years.

At the same time, she taught dancing at Pofahl Studios and worked at Holy Trinity Episcopal Church as Assistant to the Director of Program. In her job at Holy Trinity she worked with a children's choir, an adult choir, the Christian education program, and fellowship activities. She did choreography for several dramatic events. She continued




to dance with Dance Alive! and sing in the Holy Trinity Folk Choir.

The rector of Holy Trinity, Earle C. Page, and many of the church members were interested in the Myers-Briggs Type Indicator (MBTI). During her time at Holy Trinity, the church sponsored her attendance at a workshop that qualified her to give and interpret the MBTI. Along with her mother Barbara Reid, Jean developed a feedback workshop that they presented numerous times. As she worked with the MBTI, Jean became more and more convinced of the worth of the theory and of the instrument.

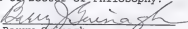
When Jean decided to go to graduate school, she knew her interests lay more in the area of psychology than in early childhood curriculum, and so combining her education experience with her psychology interests, she chose educational psychology as her major. During her years in graduate school, Jean taught in both the College of Education at the University of Florida and the Child Development Program at Santa Fe Community College.

Jean continues to use her interest and experience with personality type and education while working for the Center for Applications of Psychological Type in Gainesville, Florida, where she is on the faculty and is involved in projects in the field of education.

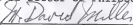
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Patricia A. Ashton, Chair  
Professor of Foundations of  
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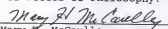
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Barry Guinagh  
Associate Professor of  
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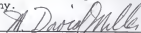
  
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Education

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Mary M. McCaulley  
Assistant Professor of  
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This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December 1998

  
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